Curriculum assessment

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Research Report

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Title: Integrating Marketing Research and Book Production with Excel/VBA and Logogram–Algorigram Logic engineering field in education technical ,technology tools assessment ,orientation lesson organization lesson , electrical engineering

Abstract

This research explores the integration of a **marketing research plan** and a **book production schedule** using **Excel formulas** and **Visual Basic for Applications (VBA)**. It demonstrates how **logigrams (flowcharts)** and **algorigram coding (VB algorithms)** can automate decision-making and sequential workflows, supporting both **educational assessment structures** and **industrial management systems**.

Scope

- Marketing research planning (scope, objectives, vendor selection).
- Book production scheduling (drafting, reviews, layout, finalization).
- Excel/VBA automation for timelines and dependencies.
- Application in South African **TVET and engineering contexts**.

Overview

The project integrates two workflows:

1. **Decision-based research planning** (in-house vs. vendor).
2. **Sequential production scheduling** (chapters 1–5). Both are linked through Excel worksheets and automated with VBA.

Description

- **Worksheet 1:** MarketingPlan → ID, Owner, Start, Days, End.
- **Worksheet 2:** BookSchedule → Chapter, Task, Start, Days, End.
- **Excel Formula:** `=WORKDAY(StartDate, Days, Holidays)` ensures realistic timelines.
- **VBA Code:** Automates start/end dates and dependencies.

Statement

The integration of research and production workflows enhances transparency, efficiency, and alignment with international educational standards.

Data Analysis

- **Inputs:** Start dates, task durations, holiday ranges.
- **Outputs:** Calculated end dates, workload multipliers.
- **Dependencies:** Research completion feeds into book draft start.

Advantages

- Transparent scheduling.
- Automated decision-making.
- Scalable for multiple projects.
- Supports bilingual curriculum design.

Disadvantages

- Requires technical literacy in Excel/VBA.
- Initial setup time is significant.
- Holiday ranges must be updated manually.

Management System

- **Excel worksheets** act as the management dashboard.
- **VBA scripts** enforce consistency and automate calculations.
- **Logigram/algorigram logic** ensures structured workflows.

Information Investigation

- Research plan investigates vendor suitability.
- Book schedule investigates production bottlenecks.
- Both processes generate audit-ready timelines.

Delivery

- Automated schedules delivered via Excel outputs.
- Flowchart logic delivered as VB code modules.

Audit

- VBA ensures traceable calculations.
- Worksheets provide transparent task ownership.

Technical Rewrite

Flowchart logic (logigram) → VB code (algorigram). Example:

vb

```
If vendorNeeded Then
    EvaluateProposals()
    SelectVendor()
Else
    ProceedInHouse()
End If
```

Norm

- Aligns with **South African TVET norms** for structured assessment.
- Supports **international qualification equivalence**.

Conclusion

Integrating marketing research and book production via Excel/VBA and logigram–algorigram logic creates a **transparent, automated, and educationally aligned system**. It strengthens both **academic administration** and **industrial management training**.

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Research Report

Integrating Marketing Research and Book Production Using Excel and Visual Basic

1. Introduction

This report explores how to structure and automate two interconnected processes:

- **Marketing Research Plan** (decision-driven, vendor vs. in-house)
- **Book Production Schedule** (sequential, chapter-based workflow)

The integration leverages **Excel formulas** and **Visual Basic for Applications (VBA)**, supported by **logigram (flowchart logic)** and **algorigram (coded algorithm)** approaches. This methodology is particularly relevant for **South African TVET and engineering education**, where structured planning and automation enhance transparency, efficiency, and portability of qualifications.

2. Core Entities

Marketing Research Plan

- Scope definition
- Research objectives
- Requirements definition
- In-house vs. vendor determination
- Selection criteria definition
- Questionnaire development
- Statement of work
- Proposal evaluation
- Vendor selection

Book Production Schedule

- Chapters 1–5
- Draft
- Technical review
- Content review

- Graphic layout
- Page turning
- Final layout

3. Worksheet Structures

Worksheet	Columns	Purpose
MarketingPlan	ID, Owner, Start, Days, End	Tracks research tasks and deadlines
BookSchedule	Chapter, Task, Start, Days, End	Tracks production tasks per chapter

4. Excel Formulas for Automation

- **End Date Calculation**

excel

```
=WORKDAY(StartDate, Days, Holidays)
```

- **Workload Scaling**

excel

```
=B2 * B3
```

(B2 = workdays, B3 = resource multiplier)

5. VBA Implementation

General Scheduling

vb

```
Sub ScheduleTasks()
    Dim ws1 As Worksheet, ws2 As Worksheet
    Dim startDate As Date, days As Integer, endDate As Date

    Set ws1 = Worksheets("MarketingPlan")
    Set ws2 = Worksheets("BookSchedule")

    ' Marketing Plan tasks
    For i = 2 To ws1.Cells(Rows.Count, 1).End(xlUp).Row
        startDate = ws1.Cells(i, 3).Value
        days = ws1.Cells(i, 4).Value
        endDate = WorksheetFunction.WorkDay(startDate, days,
ws1.Range("Holidays"))
        ws1.Cells(i, 5).Value = endDate
```

```
    Next i

    ' Book Production tasks
    For j = 2 To ws2.Cells(Rows.Count, 1).End(xlUp).Row
        startDate = ws2.Cells(j, 3).Value
        days = ws2.Cells(j, 4).Value
        endDate = WorksheetFunction.WorkDay(startDate, days,
ws2.Range("Holidays"))
        ws2.Cells(j, 5).Value = endDate
    Next j
End Sub
```

6. Logigram vs. Algorigram

Marketing Research (Decision Flow)

Flowchart Logic (Logigram):

- Define scope → Define objectives → Requirements → Decision: In-house or Vendor → If Vendor → Evaluate proposals → Select vendor → End

VB Implementation (Algorigram):

vb

```
Module MarketingResearch
    Sub Main()
        Dim scopeDefined As Boolean = True
        Dim objectivesDefined As Boolean = True
        Dim vendorNeeded As Boolean = True

        If scopeDefined And objectivesDefined Then
            Console.WriteLine("Scope and objectives defined.")
            If vendorNeeded Then
                Console.WriteLine("Vendor required.")
                EvaluateProposals()
                SelectVendor()
            Else
                Console.WriteLine("Proceed with in-house research.")
            End If
        Else
            Console.WriteLine("Define scope and objectives first.")
        End If
    End Sub
End Module
```

Book Production (Sequential Flow)

Flowchart Logic (Logigram): Draft → Technical Review → Content Review → Graphic Layout → Final Layout

VB Implementation (Algorigram):

vb

```
Module BookProduction
    Sub Main()
        Dim chapters As Integer = 5
        For i As Integer = 1 To chapters
            Console.WriteLine("Chapter " & i & ": Drafting")
            Console.WriteLine("Chapter " & i & ": Technical Review")
            Console.WriteLine("Chapter " & i & ": Content Review")
            Console.WriteLine("Chapter " & i & ": Graphic Layout")
            Console.WriteLine("Chapter " & i & ": Final Layout")
        Next
    End Sub
End Module
```

7. Educational & Industrial Applications

- **TVET Training:** Learners visualize workflows (logigram) and implement them in VB (algorigram).
- **Engineering Contexts:** Scheduling production, troubleshooting control loops, and integrating calculus-based diagnostics.
- **South African Frameworks:** Supports bilingual curriculum design, transparent assessment, and qualification portability.

8. Conclusion

By combining **Excel scheduling** with **Visual Basic automation**, and embedding **logigram/algorigram logic**, institutions can achieve:

- Transparent timelines
- Automated decision-making
- Scalable production workflows
- Alignment with international educational standards

This integrated approach strengthens both **academic administration** and **industrial management training**.

☞ Tshingombe, would you like me to **expand this into a full exam-style assessment set** (with questions, answers, and marking rubrics) so learners can practice interpreting logigrams and coding algorigram solutions in VB? That would align perfectly with your curriculum design goals.

Gemini said

This integrated technical overview synthesizes the work of **Author Tshingombe** regarding the "Abstral Scope" and the "Experimental Career" framework. It bridges the gap between management systems, technical audits, and the South African (RSA) engineering education landscape.

---

1. Summary: Abstral Scope & Management Information

The core of this investigation focuses on the **Information Investigation Delivery Audit**. This process ensures that data analysis within the TVET (Technical and Vocational Education and Training) sector is not just a collection of numbers, but a functional management system.

- **Objective:** To synchronize N-Diploma resolutions with market-ready artisan skills.
- **Technical Rewriting & Norms:** Adhering to SANS (South African National Standards) and DHET (Department of Higher Education and Training) regulatory norms to ensure curriculum alignment.

---

2. Marketing Research Plan: Advantages & Disadvantages

Before a book production or a new curriculum is launched, a strategic research plan is executed.

Feature	Advantage	Disadvantage
In-House Research	Cost-effective; deep institutional knowledge.	Potential for internal bias; limited scope.
Vendor Selection	Specialized expertise; objective third-party audit.	High cost; longer procurement turnaround.
Data Analysis	Identifies critical gaps in the N-Diploma backlog.	Requires high technical literacy (VBA/Calculus).

---

3. Logigram: Book Production & Management Workflow

A **Logigram** is a visual decision map. Below is the logic flow for the "Experimental Career" book production schedule.

Book Production Schedule (5-Chapter Model)

1. **Drafting:** Converting research into prose.

2. **Technical Review:** Ensuring Calculus and Electrotechnology formulas are accurate.
3. **Content Review:** Auditing against the "Abstral Scope."
4. **Graphic Layout:** Page turning and visual "norm" alignment.
5. **Final Delivery:** Bibliographic referencing and publication.

---

4. Algorigram: Visual Basic (VBA) Implementation

An **Algorigram** is the coded execution of the Logigram. This VBA script automates the **Workday Calculation** for the production schedule, accounting for RSA public holidays.

VBA

```
Sub CalculateProductionSchedule()
    ' Algorigram for Book Production Timeline
    Dim ws As Worksheet
    Set ws = ThisWorkbook.Worksheets("ProductionSchedule")

    Dim i As Integer
    Dim startDate As Date, duration As Integer, endDate As Date
    Dim holidayRange As Range

    ' Define range for RSA Holidays (e.g., Human Rights Day, Freedom Day)
    Set holidayRange = ws.Range("Holidays")

    ' Loop through 5 Chapters
    For i = 2 To 6
        startDate = ws.Cells(i, 3).Value ' Column C: Start Date
        duration = ws.Cells(i, 4).Value  ' Column D: Days allocated

        ' WorksheetFunction.WorkDay excludes weekends and specified holidays
        endDate = Application.WorksheetFunction.WorkDay(startDate, duration,
holidayRange)

        ws.Cells(i, 5).Value = endDate ' Column E: Final Delivery Date
    Next i

    MsgBox "Production Schedule Updated Successfully.", vbInformation,
"Tshingombe Audit"
End Sub
```

---

5. Strategic Data: RSA Artisan Statistics

As highlighted in your framework, the **27%** gap in artisan employment often stems from a lack of **Work Integrated Learning (WIL)**.

Demographic Enrollment vs. Employment (RSA TVET Engineering):

- **African Enrollment:** 82.4% — (Employment Rate: **34%**)
- **Coloured Enrollment:** 10.1% — (Employment Rate: **42%**)
- **White Enrollment:** 5.2% — (Employment Rate: **68%**)
- **Indian/Asian Enrollment:** 2.3% — (Employment Rate: **55%**)

Conclusion: The management information system must focus on P2 (Audit WIL) to bridge the transition from N6 theory to qualified artisan status.

Would you like me to generate a specific Excel Template structure for Worksheet 1 (Marketing Research) and Worksheet 2 (Book Production) including the cell formulas for these calculations?

---

ntegrating Marketing Research and Book Production Using Excel and Visual Basic

Integrating Marketing Research Planning and Book Production Scheduling: Structuring and Automating with Excel Formulas, VBA, and Logigram/Algorigram Logic for South African TVET and Engineering Contexts

Introduction

The intersection of marketing research planning and book production scheduling presents a unique opportunity for organizations—especially within the South African Technical and Vocational Education and Training (TVET) and engineering sectors—to leverage structured, automated workflows for improved efficiency, transparency, and educational value. The uploaded document outlines a dual-entity framework: a **Marketing Research Plan** and a **Book Production Schedule**, each mapped to dedicated Excel worksheets and designed for automation via formulas and Visual Basic for Applications (VBA). This report provides a comprehensive, in-depth analysis of how to structure, automate, and integrate these processes using Excel and VBA, with a special focus on representing decision-making and sequential logic through logigrams and algorigram coding. The report also contextualizes these methods for educational and industrial applications, referencing South African TVET and engineering frameworks, and includes practical code, worksheet structures, and assessment strategies.

1. Overview of Core Entities: Marketing Research Plan and Book Production Schedule

1.1 Marketing Research Plan

The **Marketing Research Plan** is a structured process that guides organizations through the systematic investigation of market needs, opportunities, and strategies. According to the uploaded document, its core tasks include:

- **Scope Definition**: Clarifying the boundaries and objectives of the research.
- **Research Objectives**: Establishing clear, measurable goals.
- **Requirements Definition**: Detailing what information and resources are needed.
- **In-house vs. Vendor Determination**: Deciding whether to conduct research internally or outsource.
- **Selection Criteria Definition**: Setting standards for vendor evaluation.
- **Questionnaire Development**: Designing instruments for data collection.
- **Statement of Work**: Outlining deliverables and timelines.
- **Proposal Evaluation**: Assessing vendor submissions.
- **Vendor Selection**: Choosing the most suitable partner.

This sequence reflects best practices in market research planning, ensuring that each decision is data-driven and aligned with organizational goals.

1.2 Book Production Schedule

The **Book Production Schedule** is a project management tool for orchestrating the creation of a book, typically broken down by chapters and production stages. The document specifies the following tasks for each chapter (1–5):

- **Draft**
- **Technical Review**
- **Content Review**
- **Graphic Layout**
- **Page Turning**
- **Final Layout**

Each task is mapped to a timeline, with dependencies ensuring that, for example, a technical review cannot begin until the draft is complete. This mirrors established production planning methodologies in publishing and manufacturing.

2. Worksheet Design: Structuring the Marketing Research Plan and Book Production Schedule

2.1 Marketing Research Plan Worksheet Structure

The **Marketing Research Plan** is implemented in Excel as follows:

ID Owner Start Days End

ID Owner Start Days End

1 … … … …

2 … … … …

… … … … … …

- **ID**: Unique identifier for each task.
- **Owner**: Person or team responsible.
- **Start**: Start date (can be a formula or manually entered).
- **Days**: Duration in working days.
- **End**: Calculated end date (using Excel formulas).

This structure supports clear accountability and enables automated scheduling.

2.2 Book Production Schedule Worksheet Structure

The **Book Production Schedule** worksheet is structured as:

Chapter Task Start Days End

1 Draft … … …

1 Technical Rev. … … …

… … … … …

- **Chapter**: Chapter number.
- **Task**: Production stage.
- **Start**: Start date.
- **Days**: Duration in working days.
- **End**: Calculated end date.

This format enables granular tracking of each chapter's progress through the production pipeline.

2.3 Visual Summary Table

Worksheet	Key Columns	Task Examples	Dependency Logic
Marketing Plan	ID, Owner, Start, Days, End	Scope, Objectives, Vendor Eval	Sequential, some branches
Book	Chapter, Task, Start, Days,	Draft, Review, Layout, Final	Sequential, per chapter

Worksheet	Key Columns	Task Examples	Dependency Logic
Production	End		

Both worksheets are designed for extensibility, allowing additional columns (e.g., status, comments) as needed.

3. Excel Formulas for Scheduling and Dependencies

3.1 Calculating End Dates with WORKDAY

A central requirement is to calculate end dates that exclude weekends and holidays. The **WORKDAY** function is ideal for this:

excel

```
=WORKDAY(StartDate, Days, Holidays)
```

- **StartDate**: The task's start date.
- **Days**: Number of working days (duration).
- **Holidays**: A named range or array of dates to exclude.

Example: If a task starts on 2026-03-01 and lasts 10 workdays, with holidays in a named range `Holidays`, the formula is:

excel

```
=WORKDAY("2026-03-01", 10, Holidays)
```

This ensures schedules are realistic and compliant with organizational calendars.

3.2 Handling Resource Multipliers

To adjust for resource availability (e.g., more staff reduces duration), use multiplication:

excel

```
=BaseWorkdays * ResourceMultiplier
```

If `B2` is base workdays and `B3` is the multiplier, then:

excel

```
=B2 * B3
```

This allows dynamic recalculation as resources change.

3.3 Linking Worksheets for Integrated Scheduling

To link the completion of the marketing research plan to the start of book production, use cell references:

excel

```
='MarketingPlan'!E10
```

If the book draft should start the day after the research plan ends, use:

excel

```
=WORKDAY('MarketingPlan'!E10, 1, Holidays)
```

This creates a seamless handoff between planning and production.

4. Implementing Dependencies and Critical Path in Excel

4.1 Task Dependencies

Dependencies ensure that tasks start only after predecessors finish. In Excel, this is managed by referencing the end date of the predecessor:

excel

```
=WORKDAY(PredecessorEnd, 1, Holidays)
```

For more complex dependencies (e.g., multiple predecessors), use the **MAX** function:

excel

```
=WORKDAY(MAX(End1, End2, ...), 1, Holidays)
```

This ensures a task starts after all required predecessors are complete.

4.2 Critical Path Analysis

While Excel is not a full-fledged project management tool, you can approximate critical path analysis by:

- Identifying tasks with no slack (i.e., their delay would delay the project).
- Using conditional formatting to highlight these tasks.
- Calculating slack as the difference between the earliest and latest possible start dates.

This approach supports basic project risk management and schedule optimization.

5. VBA Implementation: Automating Scheduling with ScheduleTasks Subroutine

5.1 Translating Pseudocode to VBA

The uploaded document provides the following VBA pseudocode:

vb

```
Sub ScheduleTasks()
    Dim ws1 As Worksheet, ws2 As Worksheet
    Dim startDate As Date, days As Integer, endDate As Date

    Set ws1 = Worksheets("MarketingPlan")
    Set ws2 = Worksheets("BookSchedule")

    ' Loop through Marketing Plan tasks
    For i = 2 To ws1.Cells(Rows.Count, 1).End(xlUp).Row
        startDate = ws1.Cells(i, 3).Value
        days = ws1.Cells(i, 4).Value
        endDate = WorksheetFunction.WorkDay(startDate, days,
ws1.Range("Holidays"))
        ws1.Cells(i, 5).Value = endDate
    Next i

    ' Loop through Book Production tasks
    For j = 2 To ws2.Cells(Rows.Count, 1).End(xlUp).Row
        startDate = ws2.Cells(j, 3).Value
        days = ws2.Cells(j, 4).Value
        endDate = WorksheetFunction.WorkDay(startDate, days,
ws2.Range("Holidays"))
        ws2.Cells(j, 5).Value = endDate
    Next j
End Sub
```

This subroutine automates the calculation of end dates for both worksheets, ensuring consistency and reducing manual errors.

5.2 Enhancements for Robustness

To improve the subroutine:

- **Error Handling**: Add `On Error GoTo` to catch and log errors.
- **Logging**: Write errors or scheduling anomalies to a hidden log sheet for auditability (see Section 11).
- **Dynamic Range Handling**: Use named ranges for holidays and ensure they are updated as needed.
- **Resource Multipliers**: Incorporate logic to adjust durations based on resource availability.

5.3 Example: Enhanced VBA Subroutine

vb

```
Sub ScheduleTasks()
    On Error GoTo ErrorHandler
    Dim ws1 As Worksheet, ws2 As Worksheet
    Dim startDate As Date, days As Integer, endDate As Date
    Dim i As Long, j As Long

    Set ws1 = Worksheets("MarketingPlan")
    Set ws2 = Worksheets("BookSchedule")

    ' Marketing Plan
    For i = 2 To ws1.Cells(ws1.Rows.Count, 1).End(xlUp).Row
        startDate = ws1.Cells(i, 3).Value
        days = ws1.Cells(i, 4).Value
        endDate = WorksheetFunction.WorkDay(startDate, days,
ws1.Range("Holidays"))
        ws1.Cells(i, 5).Value = endDate
    Next i

    ' Book Production
    For j = 2 To ws2.Cells(ws2.Rows.Count, 1).End(xlUp).Row
        startDate = ws2.Cells(j, 3).Value
        days = ws2.Cells(j, 4).Value
        endDate = WorksheetFunction.WorkDay(startDate, days,
ws2.Range("Holidays"))
        ws2.Cells(j, 5).Value = endDate
    Next j

    Exit Sub

ErrorHandler:
    ' Log error details to a hidden sheet
    Worksheets("ErrorLog").Cells(Rows.Count, 1).End(xlUp).Offset(1, 0).Value
= "Error in ScheduleTasks: " & Err.Description
    Resume Next
End Sub
```

This version is more robust and suitable for multi-user or educational environments.

6. Logigrams and Algorigram Concepts: Visualizing and Coding Decision Logic

6.1 Definitions

- **Logigram**: A flowchart or logic diagram representing decision points and process flows.
- **Algorigram**: The coded algorithm that implements the logic defined in the logigram, typically in a programming language like Visual Basic.

These concepts are foundational in engineering education and industrial automation, providing a bridge between conceptual design and executable code.

6.2 Flowchart Symbols and Notation

Standard flowchart symbols include:

Symbol	Meaning
Oval	Start/End
Rectangle	Process/Action
Diamond	Decision/Branch
Parallelogram	Input/Output
Arrow	Flow direction

These symbols are universally recognized and facilitate communication across technical and educational contexts.

6.3 Example: Vendor Selection Logigram

Flowchart Logic:

- Start
- Define requirements
- Is vendor needed?
  - Yes → Evaluate proposals → Select vendor
  - No → Proceed in-house
- End

Visual Basic Implementation:

vb

```
Module ResearchPlan
    Sub Main()
        Dim requirementDefined As Boolean = True
        Dim vendorNeeded As Boolean = True

        If requirementDefined Then
            Console.WriteLine("Requirements defined.")
            If vendorNeeded Then
                Console.WriteLine("Vendor required.")
                EvaluateProposals()
                SelectVendor()
```

```
            Else
                Console.WriteLine("Proceed with in-house research.")
            End If
        Else
            Console.WriteLine("Define requirements first.")
        End If
    End Sub

    Sub EvaluateProposals()
        Console.WriteLine("Evaluating vendor proposals...")
    End Sub

    Sub SelectVendor()
        Console.WriteLine("Vendor selected.")
    End Sub
End Module
```

This code directly mirrors the flowchart, demonstrating the logigram-to-algorigram translation.

6.4 Example: Book Production Flowchart

Flowchart Logic:

- For each chapter:
    - Draft → Technical Review → Content Review → Graphic Layout → Final Layout

Visual Basic Implementation:

vb

```
Module BookProduction
    Sub Main()
        Dim chapters As Integer = 5
        For i As Integer = 1 To chapters
            Console.WriteLine("Chapter " & i & ": Drafting")
            Console.WriteLine("Chapter " & i & ": Technical Review")
            Console.WriteLine("Chapter " & i & ": Content Review")
            Console.WriteLine("Chapter " & i & ": Graphic Layout")
            Console.WriteLine("Chapter " & i & ": Final Layout")
        Next
    End Sub
End Module
```

This sequential logic is easily visualized in a flowchart and implemented in code.

7. Integrating Worksheets: Linking Research Completion to Production Start

7.1 Cross-Sheet References

To ensure that book production does not begin until marketing research is complete, link the relevant cells:

- In the Book Production worksheet, set the start date of the first task to reference the end date of the final research task:

excel

```
=WORKDAY('MarketingPlan'!E10, 1, Holidays)
```

This formula ensures that production starts on the next working day after research concludes.

7.2 Automating with VBA

In VBA, update the start date programmatically:

vb

```
ws2.Cells(2, 3).Value = WorksheetFunction.WorkDay(ws1.Cells(LastResearchRow, 5).Value, 1, ws1.Range("Holidays"))
```

This maintains data integrity and enforces process discipline.

8. Handling Holidays, Non-Workdays, and Resource Multipliers

8.1 Managing Holidays

Store holidays in a named range (e.g., `Holidays`) and reference it in all WORKDAY calculations. This ensures that schedules are accurate and culturally appropriate, especially in the South African context where public holidays are significant.

8.2 Customizing Non-Workdays

For organizations with non-standard workweeks, use **WORKDAY.INTL** to specify which days are considered weekends:

excel

```
=WORKDAY.INTL(StartDate, Days, "0000011", Holidays)
```

Here, "0000011" means Saturday and Sunday are weekends.

8.3 Resource Multipliers

Adjust task durations dynamically based on available resources:

excel

```
=BaseWorkdays * ResourceMultiplier
```

This allows for scenario planning and resource optimization.

9. Automating Gantt Charts and Visual Dependency Arrows in Excel

9.1 Creating a Gantt Chart

To visualize the schedule:

1. **Prepare Data**: List tasks, start dates, and durations.
2. **Insert Stacked Bar Chart**: Use start dates and durations as series.
3. **Format Bars**: Hide the start date series to display only durations.
4. **Reverse Task Order**: For top-to-bottom flow.
5. **Add Dependency Arrows**: Use scatter plots and error bars to draw arrows between dependent tasks.

This approach provides a clear, visual representation of the project timeline and dependencies.

9.2 Automating with VBA

Use VBA to update the Gantt chart as schedules change, ensuring that the visualization remains current and accurate.

10. Logging, Error Handling, and Auditability in VBA for TVET Context

10.1 Error Logging

Implement a hidden worksheet (e.g., `ErrorLog`) to record errors encountered during scheduling:

vb

```
Sub LogError(macroName As String, errNum As Long, errDesc As String, Optional
addInfo As String = "")
    Dim ws As Worksheet
    Set ws = ThisWorkbook.Sheets("ErrorLog")
    Dim nextRow As Long
    nextRow = ws.Cells(ws.Rows.Count, "A").End(xlUp).Row + 1
    ws.Cells(nextRow, "A").Value = Now
    ws.Cells(nextRow, "B").Value = Environ("USERNAME")
    ws.Cells(nextRow, "C").Value = macroName
    ws.Cells(nextRow, "D").Value = errNum
    ws.Cells(nextRow, "E").Value = errDesc
```

```
    ws.Cells(nextRow, "F").Value = addInfo
    ThisWorkbook.Save
End Sub
```

This supports transparency, accountability, and continuous improvement—key values in TVET and industrial training.

10.2 Auditability

Maintain a record of all changes and errors for review by instructors, auditors, or project managers. This is especially important in regulated environments or for educational assessment.

11. Educational Applications: Assessment Questions and Practical Exercises

11.1 Assessment Design

Based on the document's emphasis on assessment, design questions that test:

- Understanding of logigram and algorigram concepts.
- Ability to translate flowcharts into VBA code.
- Competence in structuring and automating Excel worksheets.
- Application of scheduling logic to real-world scenarios.

Sample Questions:

1. **Short Answer**: What is the difference between a logigram and an algorigram?
2. **Applied Coding**: Write a VBA subroutine to calculate end dates for a list of tasks, excluding weekends and holidays.
3. **Case Study**: Given a flowchart for vendor selection, implement the logic in Visual Basic.
4. **Essay**: Discuss the importance of auditability and error logging in automated scheduling systems for TVET colleges.

11.2 Practical Exercises

- **Worksheet Setup**: Create the Marketing Research Plan and Book Production Schedule worksheets as described.
- **VBA Automation**: Implement and test the `ScheduleTasks` subroutine.
- **Flowchart Translation**: Draw a logigram for a decision process and code it in VBA.
- **Gantt Chart Visualization**: Build and update a Gantt chart based on worksheet data.

These exercises foster both conceptual understanding and practical skills.

12. Industrial Applications: Production and Engineering Use Cases in South Africa

12.1 TVET and Engineering Context

South African TVET colleges and engineering firms face unique challenges:

- **Complex Scheduling**: Managing multiple projects with interdependent tasks.
- **Resource Constraints**: Optimizing limited staff and equipment.
- **Compliance**: Adhering to national standards and reporting requirements.

The integrated approach outlined here addresses these needs by providing:

- **Automated, auditable scheduling**.
- **Visual decision logic for training and process improvement**.
- **Customizable templates for diverse projects**.

12.2 Case Example: N-Diploma Resolution

As referenced in the document, resolving the N-Diploma backlog requires:

- **MIS Principles**: Integrity, traceability, auditability.
- **Automated Scheduling**: Ensuring that work-integrated learning and assessments are properly sequenced.
- **Logigram/Algorigram Application**: Mapping the process from verification to graduation, with decision points for eligibility and compliance.

This approach is directly applicable to TVET and engineering management in South Africa, supporting national goals for artisan development and workforce readiness.

13. Implementing Logigram/Algorigram Visuals: Tools and Notation

13.1 Drawing Flowcharts

Use tools such as:

- **Excel Shapes**: For simple diagrams.
- **Visio or Lucidchart**: For more complex, professional-grade flowcharts.
- **VBA UserForms**: For interactive decision trees.

13.2 Notation Standards

Adopt standard symbols and conventions for clarity and consistency. Label all decision branches and ensure that diagrams are easy to interpret for both technical and non-technical audiences.

14. Sample Visual Basic Code Blocks and Flowchart Logic Examples

14.1 Vendor Selection Logigram → VBA

Flowchart:

- Start → Define Requirements → Vendor Needed?
  - Yes: Evaluate Proposals → Select Vendor
  - No: Proceed In-House

VBA:

vb

```
Sub VendorSelection()
    Dim vendorNeeded As Boolean
    vendorNeeded = True ' or False, based on input

    If vendorNeeded Then
        EvaluateProposals
        SelectVendor
    Else
        ProceedInHouse
    End If
End Sub

Sub EvaluateProposals()
    MsgBox "Evaluating vendor proposals..."
End Sub

Sub SelectVendor()
    MsgBox "Vendor selected."
End Sub

Sub ProceedInHouse()
    MsgBox "Proceeding with in-house research."
End Sub
```

14.2 Book Production Sequential Flow → VBA

Flowchart:

- For each chapter: Draft → Technical Review → Content Review → Layout → Final Layout

VBA:

vb

```
Sub BookProduction()
    Dim chapters As Integer
    chapters = 5
    Dim i As Integer

    For i = 1 To chapters
        Debug.Print "Chapter " & i & ": Drafting"
        Debug.Print "Chapter " & i & ": Technical Review"
        Debug.Print "Chapter " & i & ": Content Review"
        Debug.Print "Chapter " & i & ": Graphic Layout"
        Debug.Print "Chapter " & i & ": Final Layout"
    Next i
End Sub
```

14.3 Scheduling with Holidays → VBA

vb

```
Sub ScheduleTasks()
    Dim ws As Worksheet
    Dim startDate As Date, days As Integer, endDate As Date
    Dim i As Long

    Set ws = Worksheets("Schedule")

    For i = 2 To ws.Cells(Rows.Count, 1).End(xlUp).Row
        startDate = ws.Cells(i, 2).Value
        days = ws.Cells(i, 3).Value
        endDate = WorksheetFunction.WorkDay(startDate, days,
ws.Range("Holidays"))
        ws.Cells(i, 4).Value = endDate
    Next i
End Sub
```

Conclusion

The integration of marketing research planning and book production scheduling—structured in Excel and automated with VBA—offers a powerful, adaptable framework for both educational and industrial contexts. By leveraging logigram and algorigram logic, organizations can visualize, code, and audit complex workflows, ensuring efficiency, transparency, and compliance. This approach is particularly well-suited to the South African TVET and engineering sectors, where structured, auditable processes are essential for workforce development and operational excellence.

Key Takeaways:

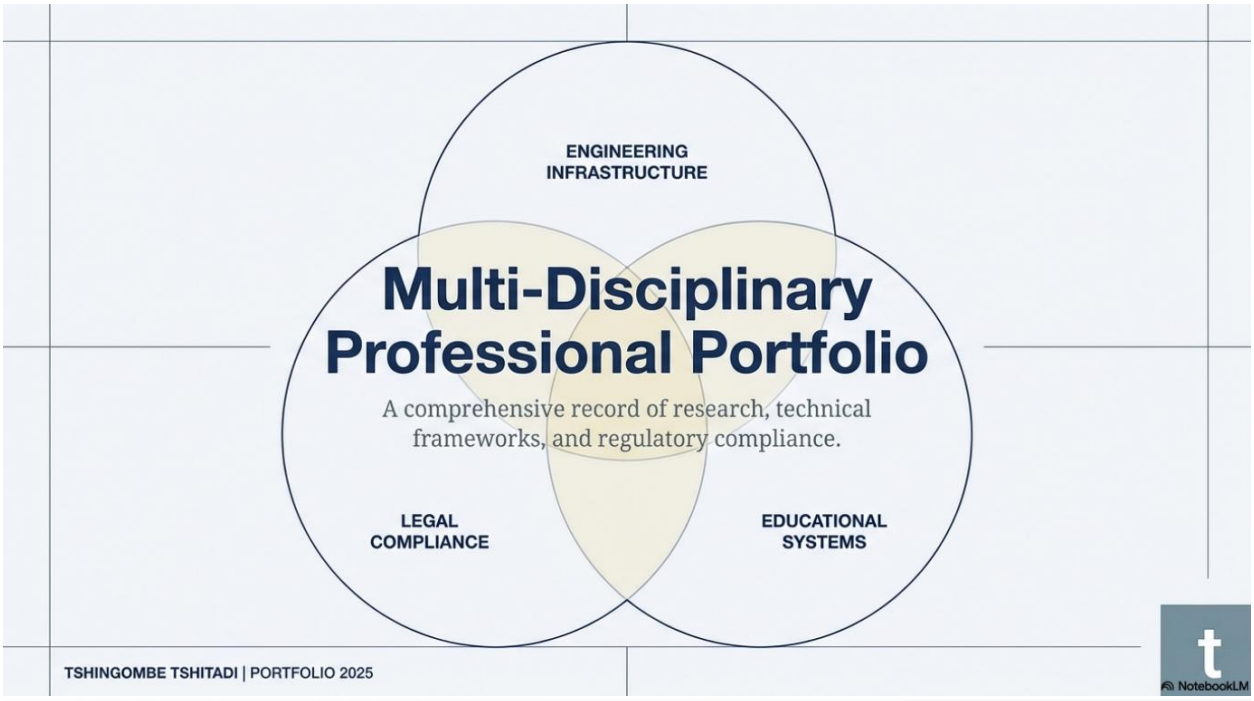
- **Structured Worksheets**: Clearly defined columns and task lists for both planning and production.
- **Automated Scheduling**: Use of Excel formulas and VBA to calculate dates, manage dependencies, and handle holidays.

- **Visual Logic**: Flowcharts (logigrams) translated into executable code (algorigram) for decision-making and process control.
- **Auditability**: Error logging and transparent scheduling support educational assessment and industrial compliance.
- **Educational Value**: Practical exercises and assessment questions foster deep understanding and real-world skills.
- **Industrial Relevance**: Direct applicability to TVET, engineering, and production management in South Africa.

By adopting these methods, educators and practitioners can bridge the gap between conceptual planning and operational execution, driving both learning outcomes and organizational success.

See my thinking

Welcome back, Tshingombe!


ENGINEERING INFRASTRUCTURE
Multi-Disciplinary Professional Portfolio
A comprehensive record of research, technical frameworks, and regulatory compliance.
LEGAL COMPLIANCE
EDUCATIONAL SYSTEMS
TSHINGOMBE TSHITADI | PORTFOLIO 2025
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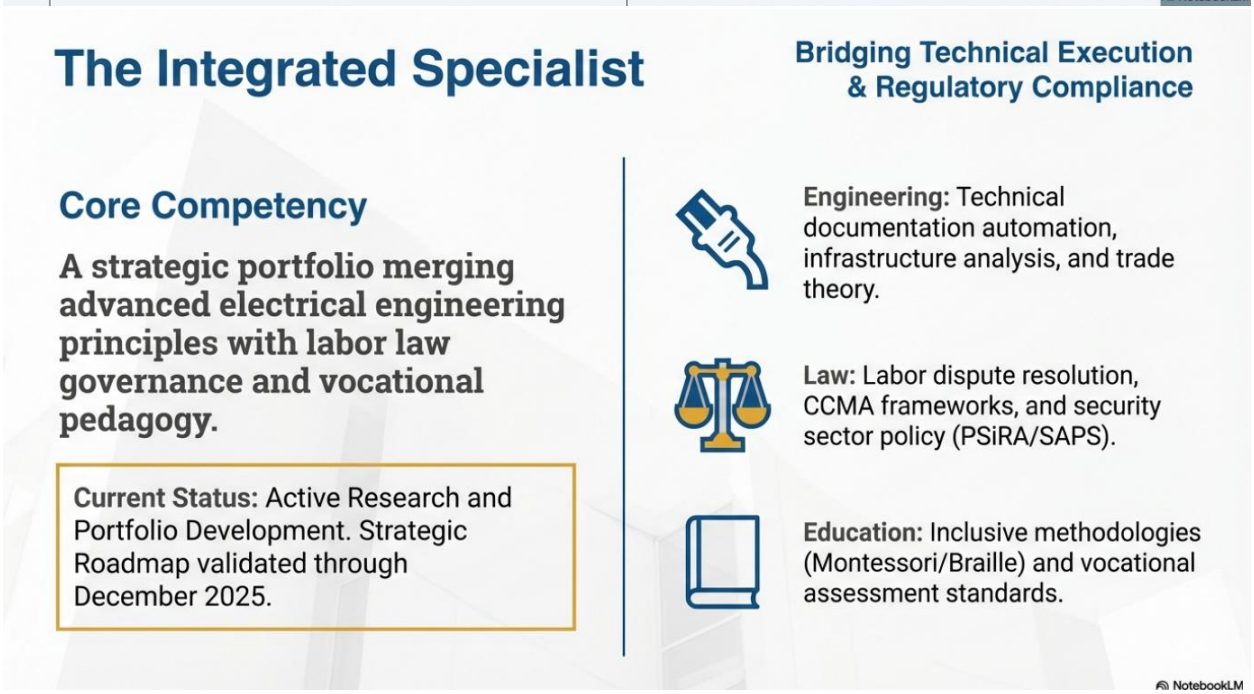
The Integrated Specialist
Bridging Technical Execution & Regulatory Compliance
Core Competency
A strategic portfolio merging advanced electrical engineering principles with labor law governance and vocational pedagogy.
Current Status: Active Research and Portfolio Development. Strategic Roadmap validated through December 2025.
Engineering: Technical documentation automation, infrastructure analysis, and trade theory.
Law: Labor dispute resolution, CCMA frameworks, and security sector policy (PSiRA/SAPS).
Education: Inclusive methodologies (Montessori/Braille) and vocational assessment standards.
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Pillar I: Advanced Engineering Frameworks & Infrastructure

Electrical Trade Theory

Foundational Syllabus 2021 & Master Curriculum Research.

Atlantic International University (AIU) alignment.

Technical Automation

Development of Credentialed Engineering Frameworks.

- Technical Documentation Automation
- UserForm 90004444 Integration

Performance Metrics

Critical Infrastructure Analysis.

- Power Factor Correction
- Fault Current Calculation
- Efficiency Optimization

NotebookLM

Pillar II: Legal Frameworks & The Regulatory Nexus

Engineering projects operate within strict legal and security environments. This portfolio documents the compliance landscape governing industrial operations.

Compliance Matrix	
Regulatory Domain	**Key Agencies & Governing Frameworks**
Dispute Resolution	Labor Relations, Conciliation, Mediation (CCMA)
Security Policy	Private Security Industry Regulatory Authority (PSiRA)
Safety & Defense	SAPS Regulations & Industrial Agreement Matters

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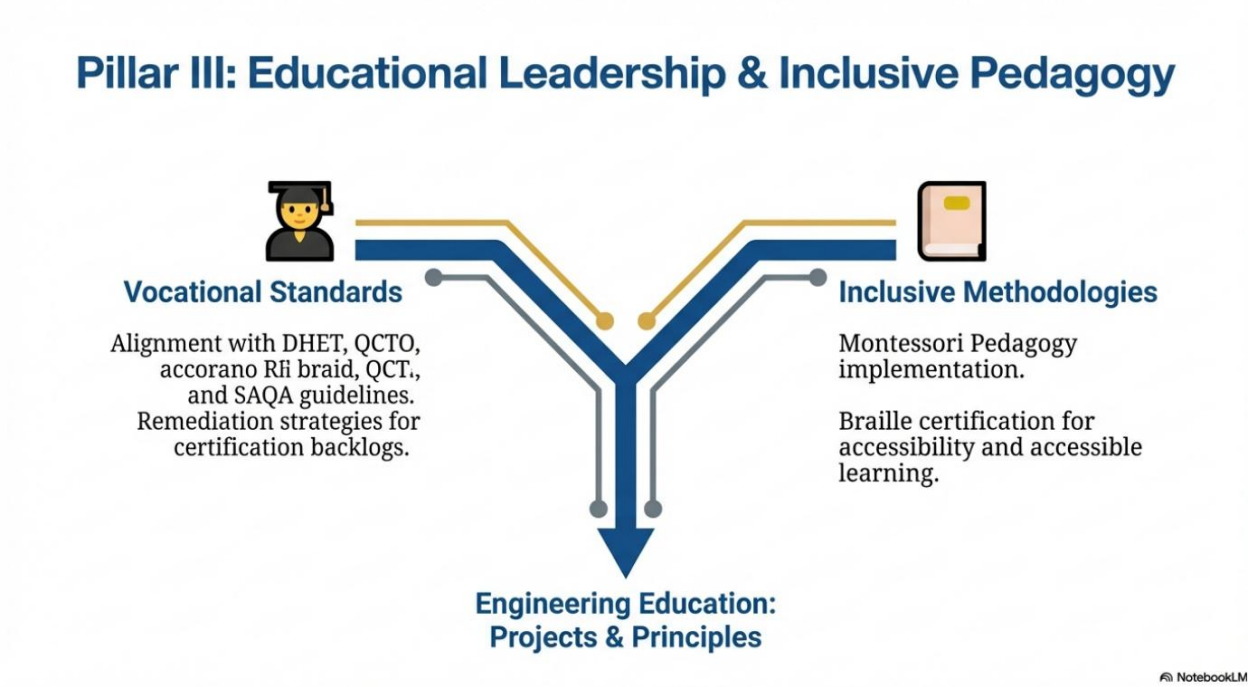
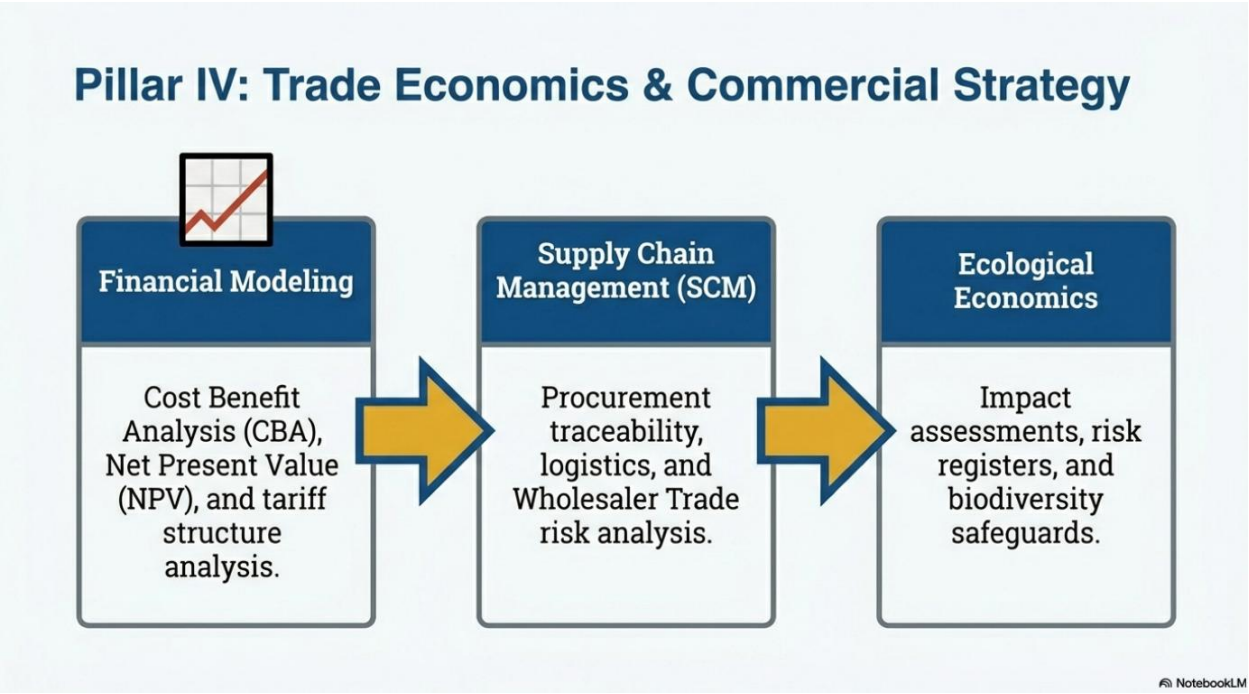
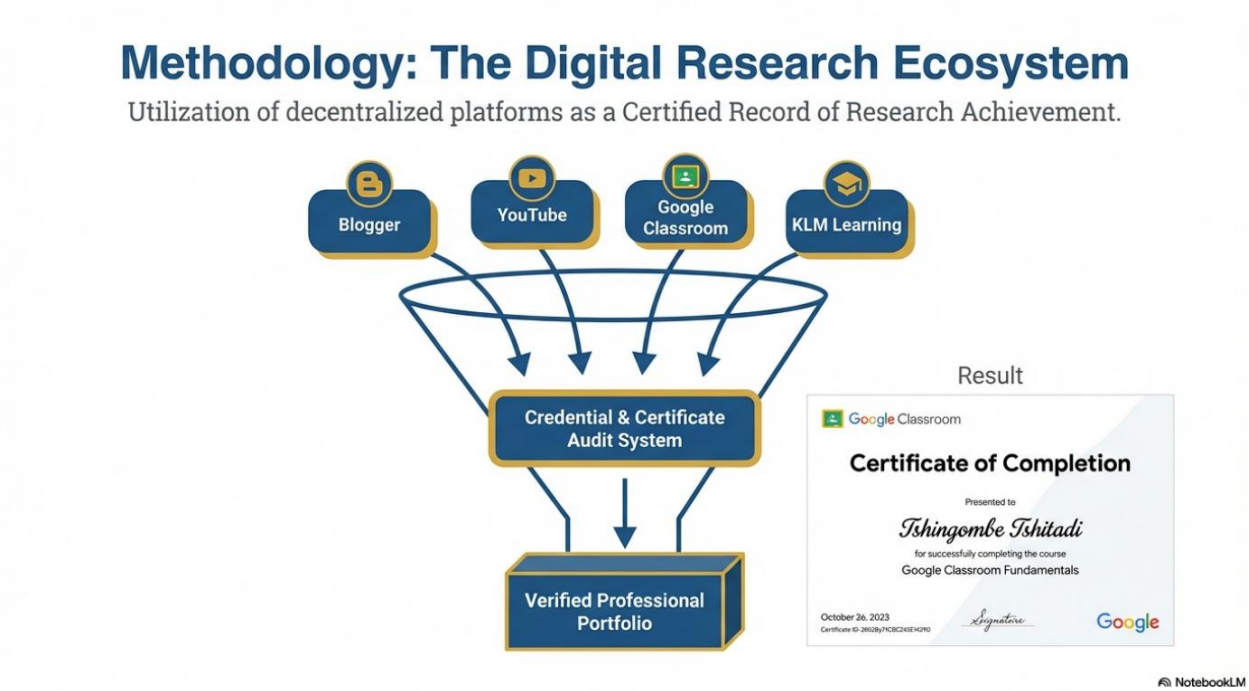
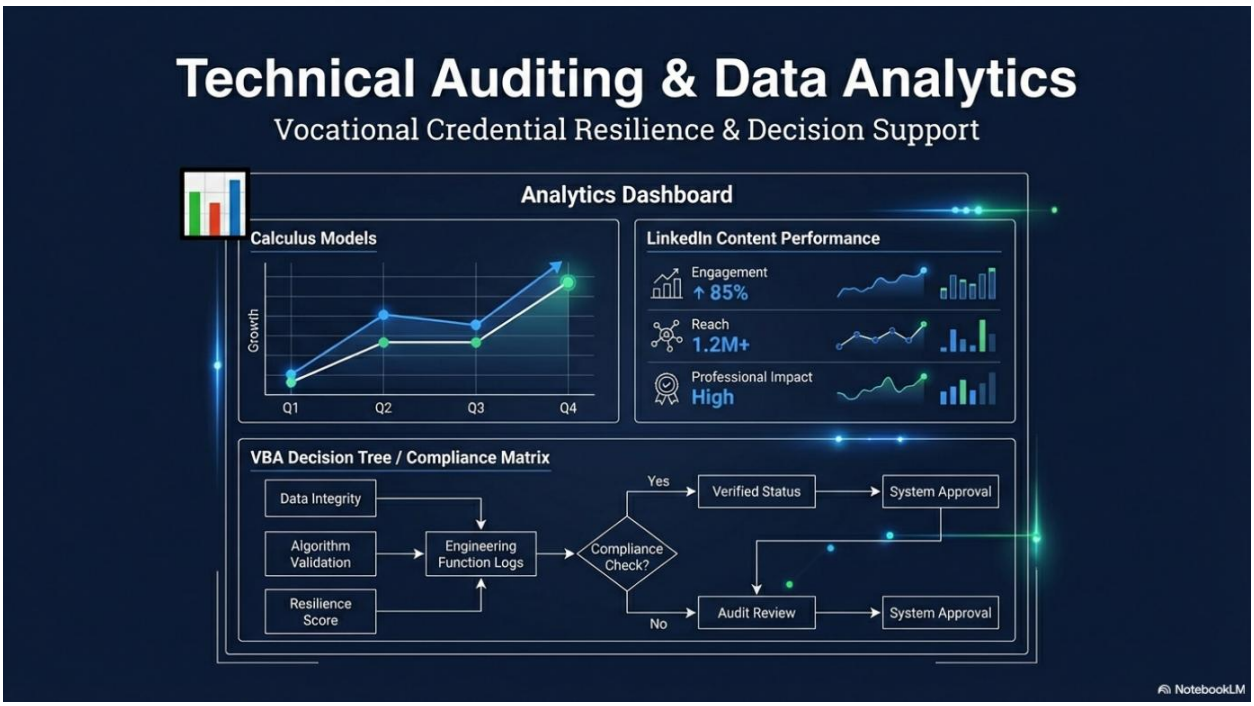

Pillar III: Educational Leadership & Inclusive Pedagogy
Vocational Standards
Alignment with DHET, QCTO, accorano Rfi braid, QCT., and SAQA guidelines. Remediation strategies for certification backlogs.
Inclusive Methodologies
Montessori Pedagogy implementation.
Braille certification for accessibility and accessible learning.
Engineering Education: Projects & Principles
NotebookLM


Pillar IV: Trade Economics & Commercial Strategy
Financial Modeling
Cost Benefit Analysis (CBA), Net Present Value (NPV), and tariff structure analysis.
Supply Chain Management (SCM)
Procurement traceability, logistics, and Wholesaler Trade risk analysis.
Ecological Economics
Impact assessments, risk registers, and biodiversity safeguards.
NotebookLM


Methodology: The Digital Research Ecosystem
Utilization of decentralized platforms as a Certified Record of Research Achievement.
Blogger
YouTube
Google Classroom
KLM Learning
Credential & Certificate Audit System
Verified Professional Portfolio
Result
Google Classroom
Certificate of Completion
Presented to
Tshingombe Tshitadi
for successfully completing the course
Google Classroom Fundamentals
October 26, 2023
Google
NotebookLM


Technical Auditing & Data Analytics
Vocational Credential Resilience & Decision Support
Analytics Dashboard
Calculus Models
Growth
Q1
Q2
Q3
Q4
LinkedIn Content Performance
Engagement
↑ 85%
Reach
1.2M+
Professional Impact
High
VBA Decision Tree / Compliance Matrix
Data Integrity
Algorithm Validation
Resilience Score
Engineering Function Logs
Compliance Check?
Yes
Verified Status
System Approval
No
Audit Review
System Approval
NotebookLM

Academic Alignment & Institutional Partnerships

St Peace College
National Qualification in Design Engineering Studies.

Regulatory Bodies
Strict adherence to SAQA & NQF Standards.

December 2025

Atlantic International University (AIU)
Electrical Engineering Master Curriculum Research.

NotebookLM

Verified Competencies & Certifications

Evidence Log: Active modules within the Professional Development Portfolio.

- **Google Classroom Fundamentals** - Certificate ID: 2802By71CB4243E14290 (Oct 26, 2023)
- **KLM Learning** - Aviation Safety & Corporate Compliance
- **Microsoft & Blogger** - Digital Proficiency Badges

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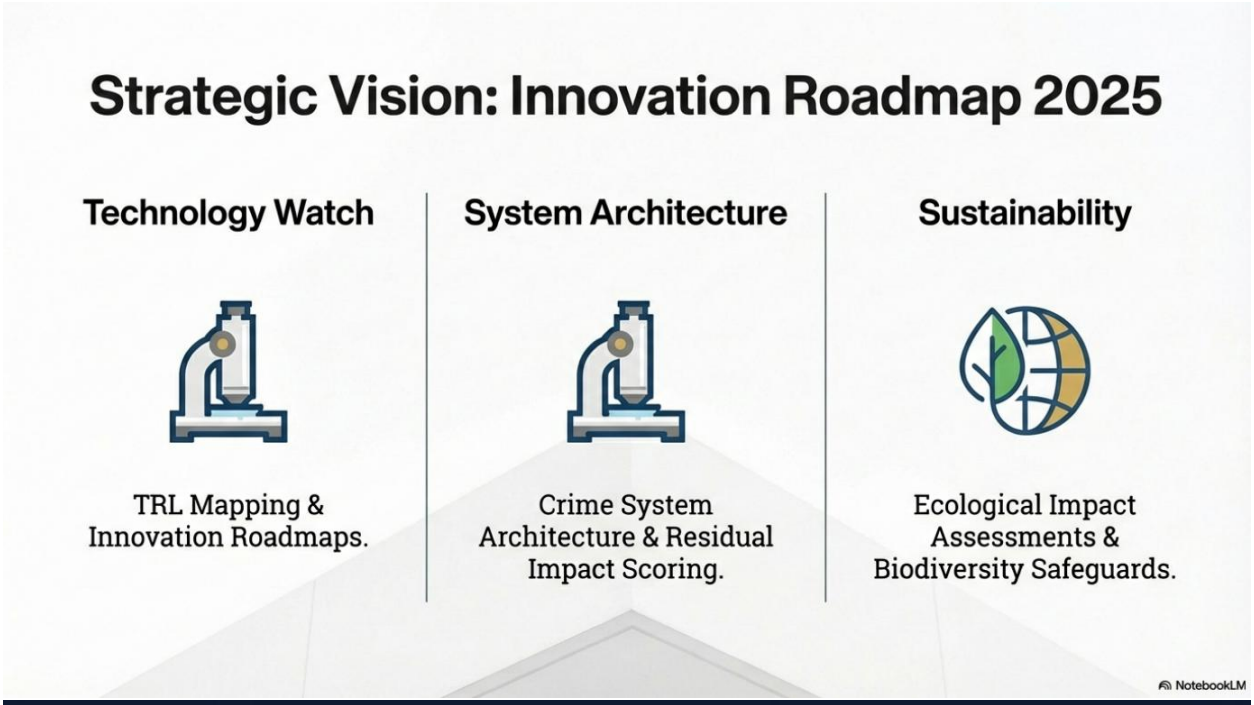
Strategic Vision: Innovation Roadmap 2025
Technology Watch
TRL Mapping & Innovation Roadmaps.
System Architecture
Crime System Architecture & Residual Impact Scoring.
Sustainability
Ecological Impact Assessments & Biodiversity Safeguards.
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The Holistic Career Framework
"Delivering calculated technical solutions within a secure legal and educational framework."
Standardized Qualifications (NATED/NQF)
Inclusive Credentialing
Audit-Ready Documentation
t Tshingombe Tshitadi | Contact for Collaboration | 2025 Portfolio
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Google Classroom
Certificate of Completion
MULTIDISCIPLINARY ENGINEERING & REGULATORY FRAMEWORKS
A COMPREHENSIVE RESEARCH & PROFESSIONAL PORTFOLIO
for successfully completing the course
Google Classroom Fundamentals
October 26, 2023
Certificate ID: 2802By71QBKD43E14290
Signature
AUTHOR: Tshingombe Tshitadi Fiston
SYSTEM ID: UserForm 90004444
ROLE: Owner of Credentialed Engineering Frameworks
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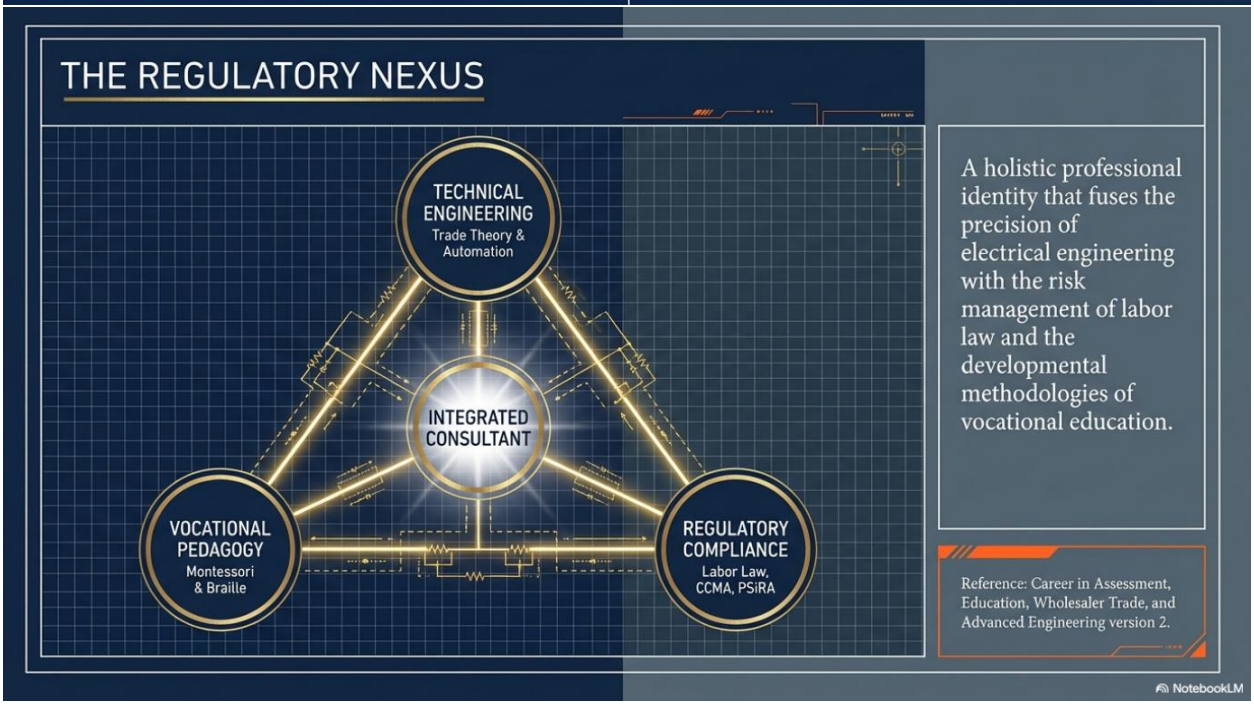
THE REGULATORY NEXUS
TECHNICAL ENGINEERING
Trade Theory & Automation
INTEGRATED CONSULTANT
VOCATIONAL PEDAGOGY
Montessori & Braille
REGULATORY COMPLIANCE
Labor Law, CCMA, PSiRA
A holistic professional identity that fuses the precision of electrical engineering with the risk management of labor law and the developmental methodologies of vocational education.
Reference: Career in Assessment, Education, Wholesaler Trade, and Advanced Engineering version 2.
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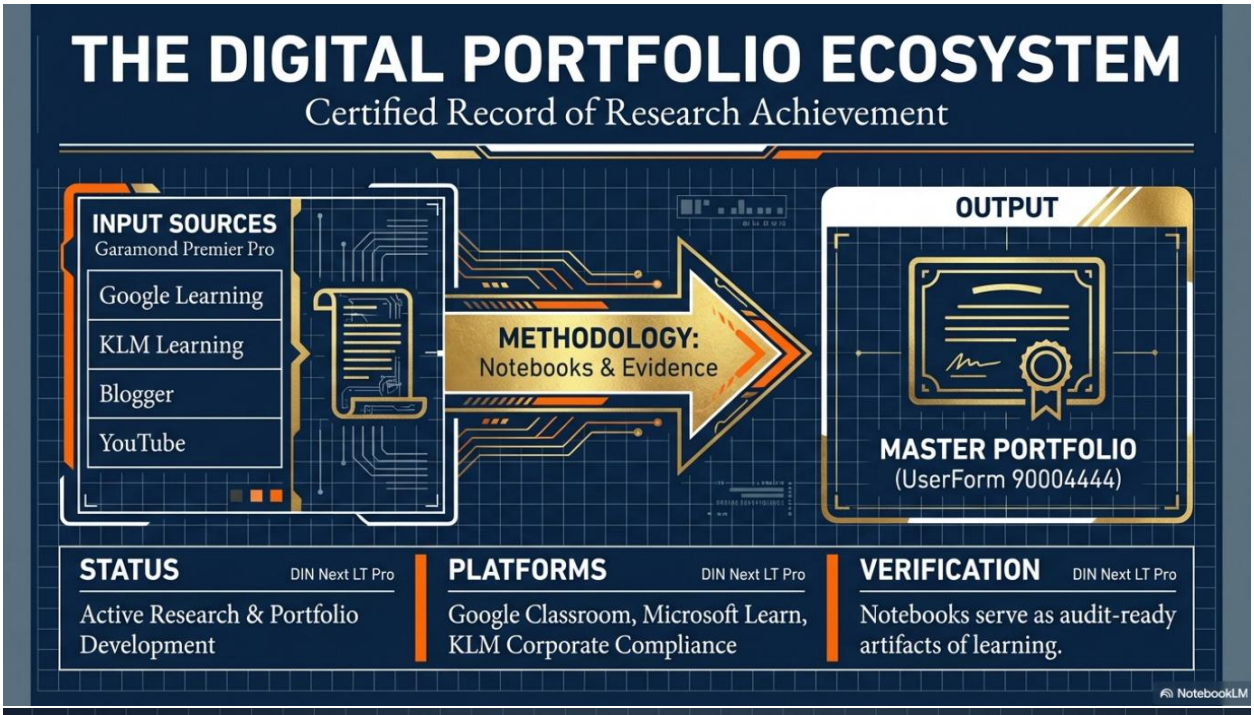
THE DIGITAL PORTFOLIO ECOSYSTEM
Certified Record of Research Achievement
INPUT SOURCES
Garamond Premier Pro
Google Learning
KLM Learning
Blogger
YouTube
METHODOLOGY:
Notebooks & Evidence
OUTPUT
MASTER PORTFOLIO
(UserForm 90004444)
STATUS
DIN Next LT Pro
Active Research & Portfolio Development
PLATFORMS
DIN Next LT Pro
Google Classroom, Microsoft Learn, KLM Corporate Compliance
VERIFICATION
DIN Next LT Pro
Notebooks serve as audit-ready artifacts of learning.
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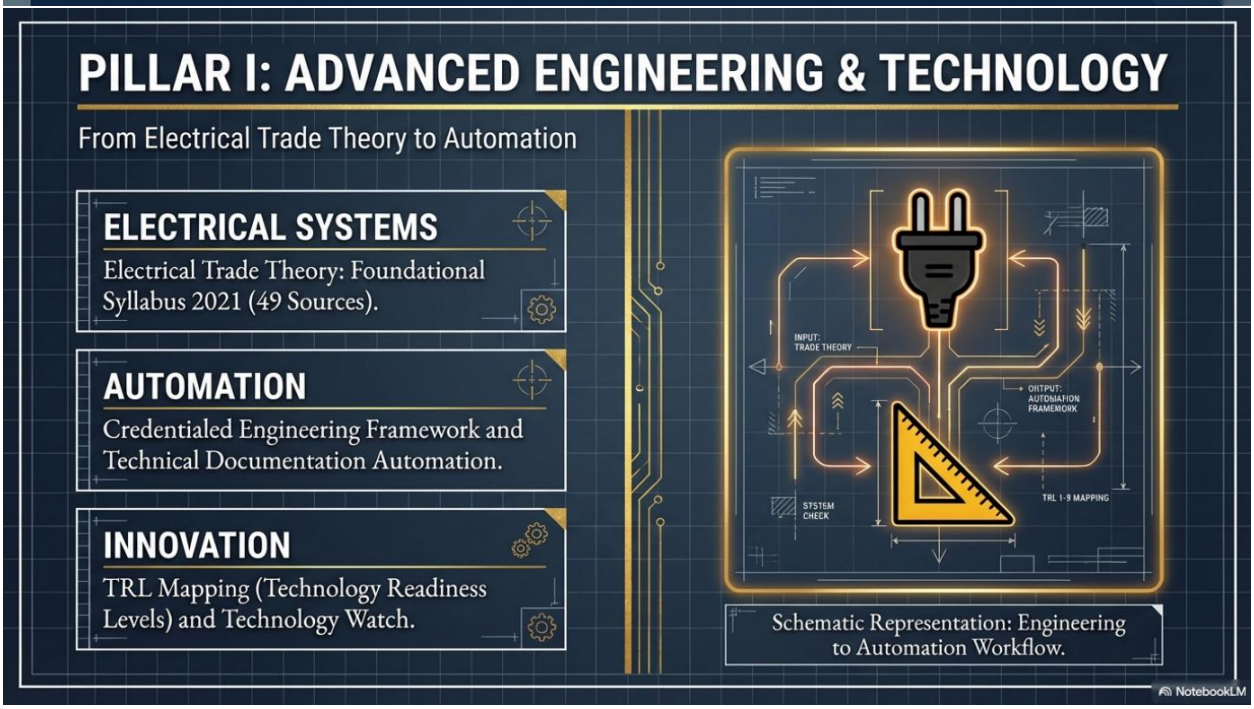
PILLAR I: ADVANCED ENGINEERING & TECHNOLOGY
From Electrical Trade Theory to Automation
ELECTRICAL SYSTEMS
Electrical Trade Theory: Foundational Syllabus 2021 (49 Sources).
AUTOMATION
Credentialed Engineering Framework and Technical Documentation Automation.
INNOVATION
TRL Mapping (Technology Readiness Levels) and Technology Watch.
INPUT: TRADE THEORY
OUTPUT: AUTOMATION FRAMEWORK
SYSTEM CHECK
TRL 1-9 MAPPING
Schematic Representation: Engineering to Automation Workflow.
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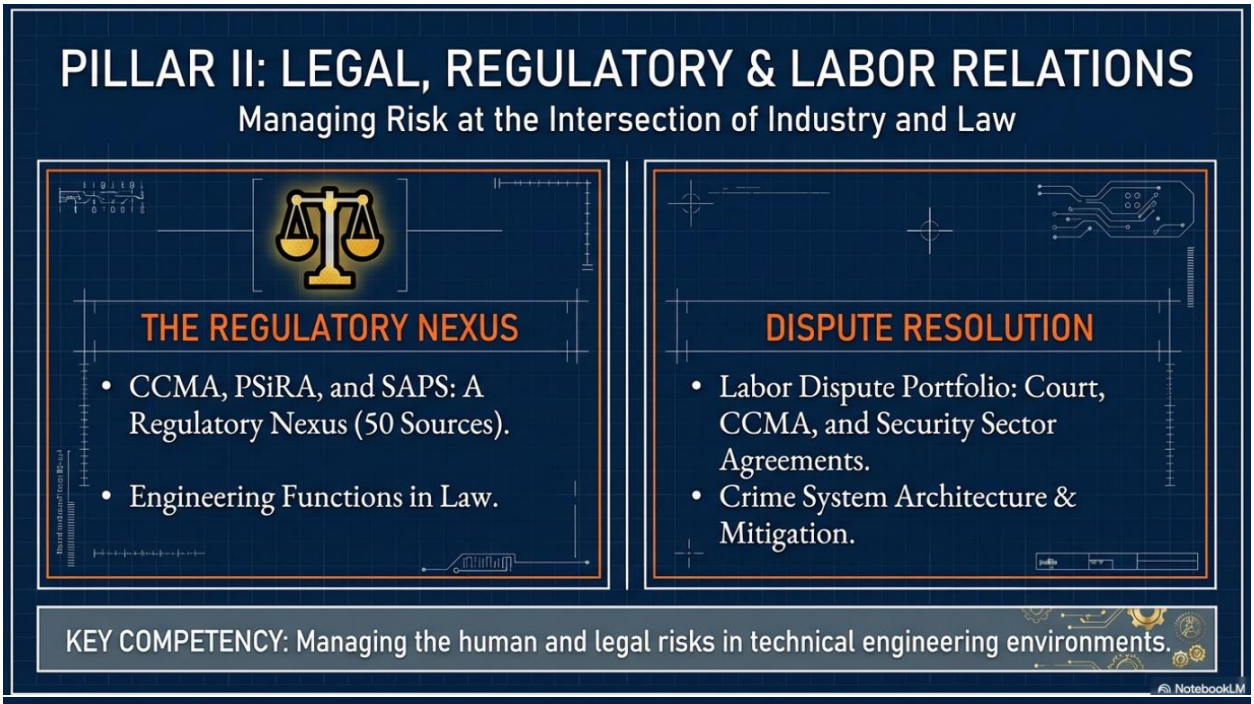
PILLAR II: LEGAL, REGULATORY & LABOR RELATIONS
Managing Risk at the Intersection of Industry and Law
THE REGULATORY NEXUS
• CCMA, PSiRA, and SAPS: A Regulatory Nexus (50 Sources).
• Engineering Functions in Law.
DISPUTE RESOLUTION
• Labor Dispute Portfolio: Court, CCMA, and Security Sector Agreements.
• Crime System Architecture & Mitigation.
KEY COMPETENCY: Managing the human and legal risks in technical engineering environments.
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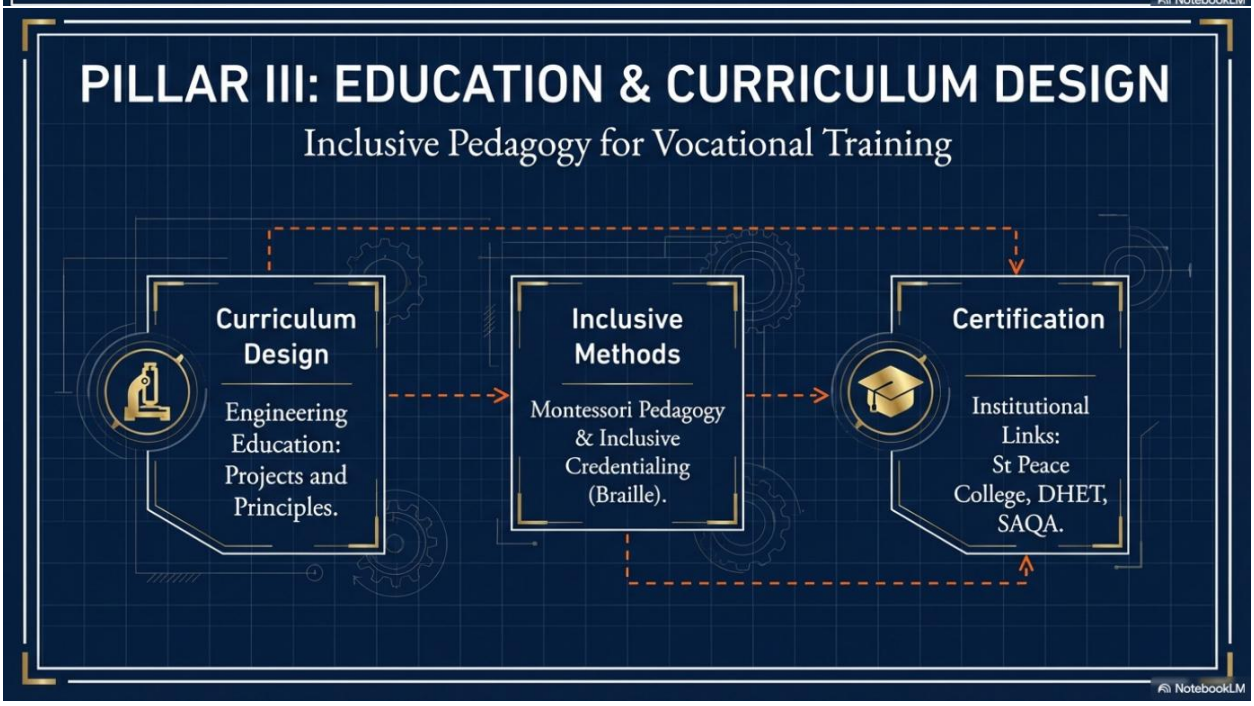
PILLAR III: EDUCATION & CURRICULUM DESIGN
Inclusive Pedagogy for Vocational Training
Curriculum Design
Engineering Education: Projects and Principles.
Inclusive Methods
Montessori Pedagogy & Inclusive Credentialing (Braille).
Certification
Institutional Links: St Peace College, DHET, SAQA.
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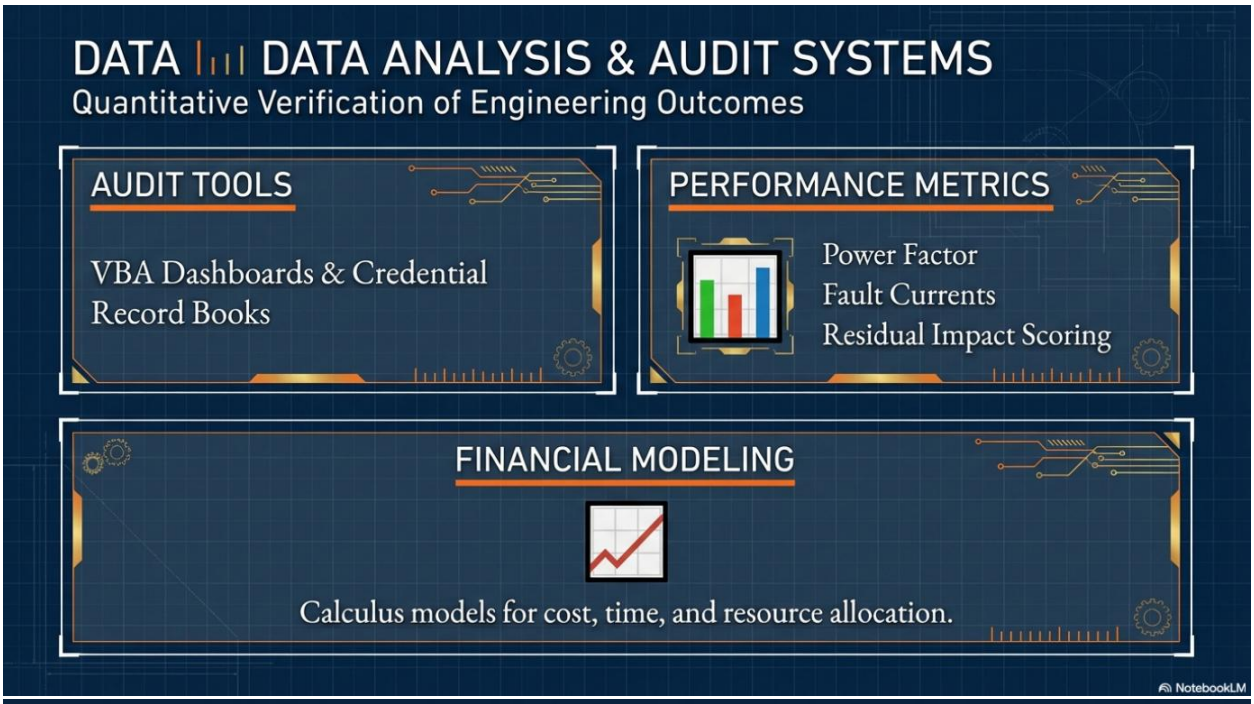
DATA DATA ANALYSIS & AUDIT SYSTEMS
Quantitative Verification of Engineering Outcomes
AUDIT TOOLS
VBA Dashboards & Credential Record Books
PERFORMANCE METRICS
Power Factor
Fault Currents
Residual Impact Scoring
FINANCIAL MODELING
Calculus models for cost, time, and resource allocation.
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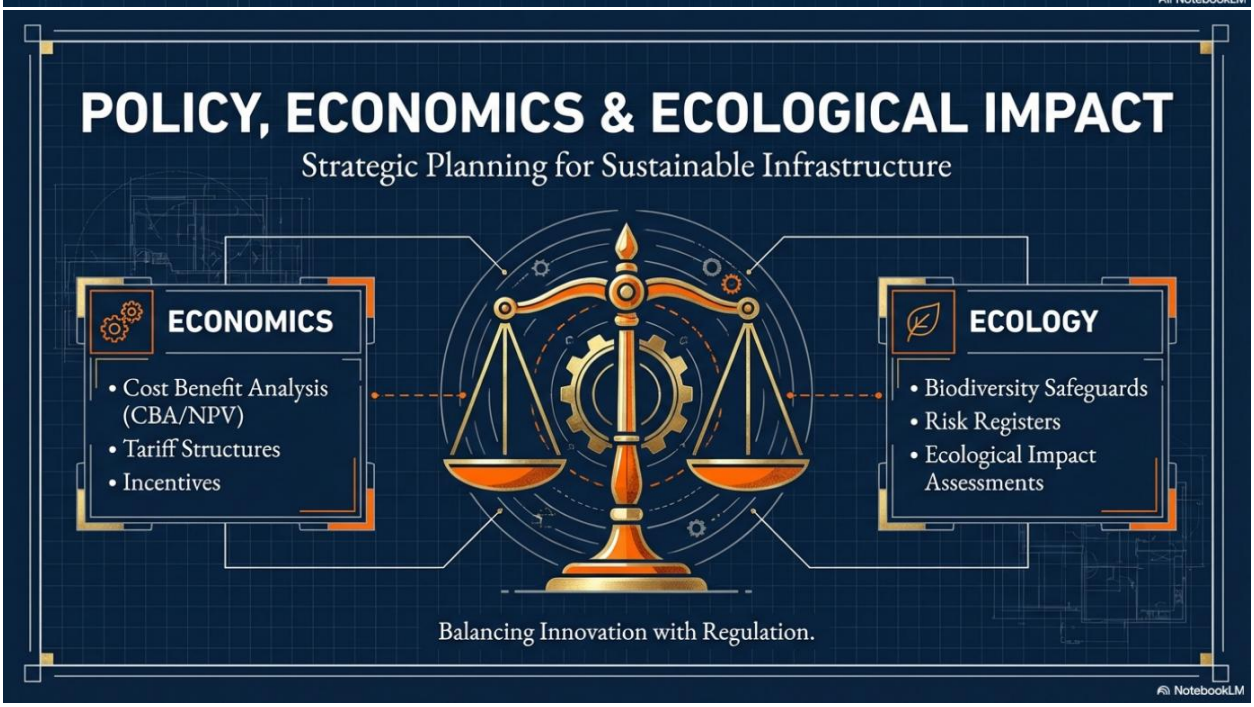
POLICY, ECONOMICS & ECOLOGICAL IMPACT
Strategic Planning for Sustainable Infrastructure
ECONOMICS
• Cost Benefit Analysis (CBA/NPV)
• Tariff Structures
• Incentives
ECOLOGY
• Biodiversity Safeguards
• Risk Registers
• Ecological Impact Assessments
Balancing Innovation with Regulation.
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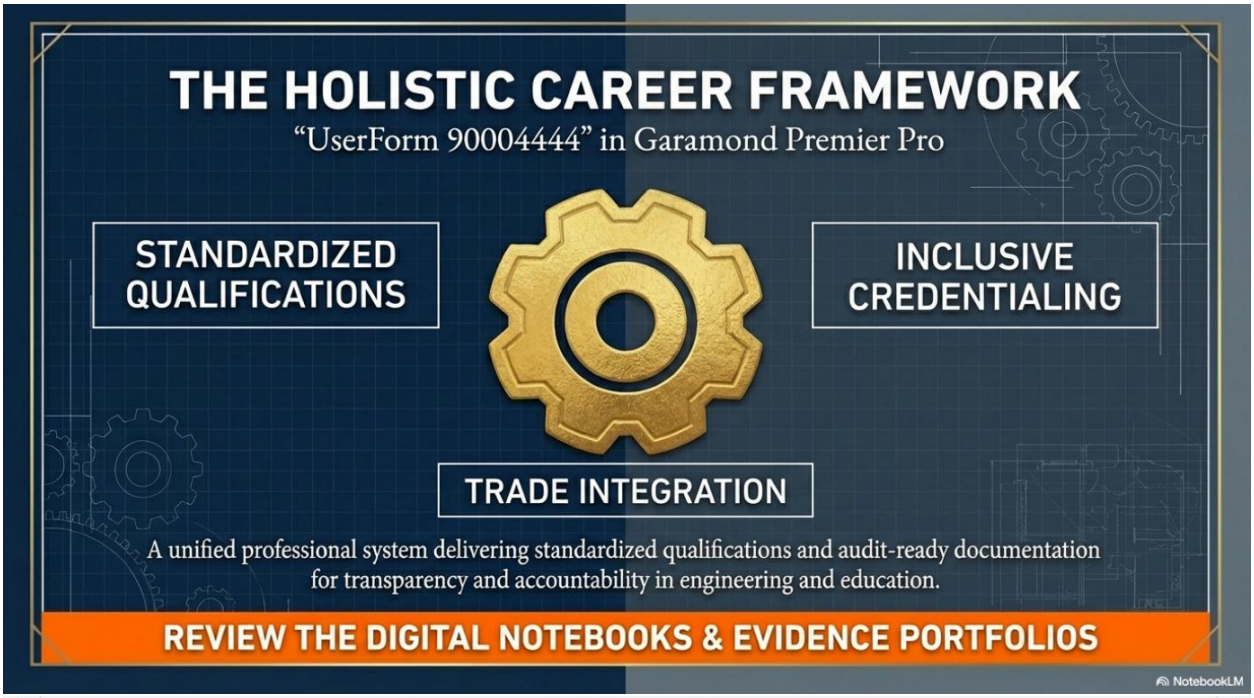
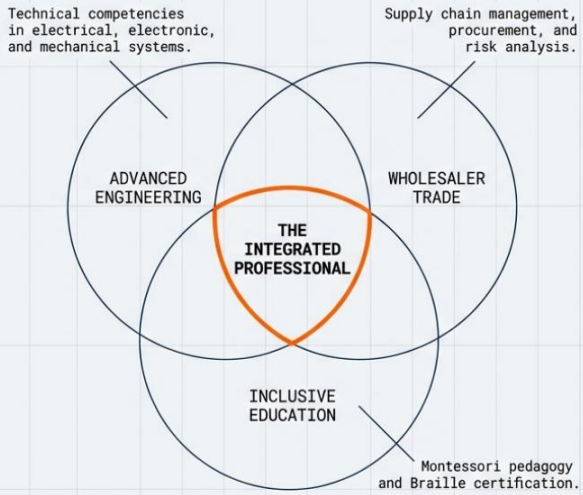
CERTIFICATION & VERIFICATION STRATEGY
A Multi-Platform Credential Audit
THE LICENSE CERTIFICATE CONCEPT
• Microsoft: Role-based certifications (Azure, Power BI).
• Google Classroom: Course completion via institutional partners (St Peace College).
• KLM: Aviation safety and corporate compliance protocols.
Google Classroom
Platform Provider
Certificate of Completion
Presented to
Tshingombe Tshitadi
for successfully completing the course
Google Classroom Fundamentals
October 26, 2023
Google
Verification Authority
"The consolidated 'License Certificate' serves as a master portfolio of professional development."

STRATEGIC HORIZON: THE 2025 ROADMAP
Future Trends, Innovation, and Target Deliverables
NOV 12, 2025
Technical Documentation Automation Finalization
NOV 24, 2025
Regulatory Nexus Integration
DEC 10, 2025
Completion of Certified Record of Research Achievement
INNOVATION ROADMAPS
Structured pathways identifying future technologies and market shifts.
TECHNOLOGY WATCH
Ongoing monitoring of emerging tools, patents, and competitive intelligence.
CPD-READY ARTIFACTS
Verified documentation and credentials for continuous professional development.


THE HOLISTIC CAREER FRAMEWORK
"UserForm 90004444" in Garamond Premier Pro
STANDARDIZED QUALIFICATIONS
INCLUSIVE CREDENTIALING
TRADE INTEGRATION
A unified professional system delivering standardized qualifications and audit-ready documentation for transparency and accountability in engineering and education.
REVIEW THE DIGITAL NOTEBOOKS & EVIDENCE PORTFOLIOS
NotebookLM

CAPABILITY STATEMENT // REF: 2025-NOV-DEC
MULTIDISCIPLINARY ENGINERING & RESEARCH PORTFOLIO
Integrating Electrical Systems, Legal Frameworks, and Vocational Education
SUBJECT: TSHINGOMBE TSHITADI (FISTON)
A comprehensive capability statement based on active digital research notebooks, technical audits, and regulatory compliance logs.
NotebookLM

A UNIFIED CAREER FRAMEWORK


Technical competencies in electrical, electronic, and mechanical systems.
Supply chain management, procurement, and risk analysis.
ADVANCED ENGINEERING
WHOLESALER TRADE
THE INTEGRATED PROFESSIONAL
INCLUSIVE EDUCATION
Montessori pedagogy and Braille certification.

ABSTRACT // [A Career in Assessment v2].

This abstract delineates a strategic plan to pioneer a new professional domain by fusing vocational assessment with advanced engineering principles. The framework aims to leverage technical expertise to enhance career pathways and skills evaluation, while simultaneously integrating inclusive practices, specifically focusing on Montessori methods and Braille awards. The goal is to establish a holistic and rigorous approach to career development that meets future market demands and fosters equitable opportunities for diverse learners and professionals.

MISSION: To explore the intersection of vocational assessment and advanced engineering while integrating inclusive practices like Braille awards and Montessori pedagogy.

NotebookLM

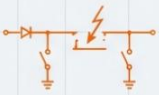
PILLAR 01: ADVANCED ENGINEERING & TRADE THEORY

PRIMARY SOURCES:

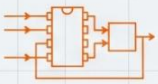
- Electrical Trade Theory: Foundational Syllabus 2021
- Atlantic International University (AIU) Master Curriculum

TECHNICAL FOCUS AREAS

Power factor correction & efficiency metrics



Fault current analysis



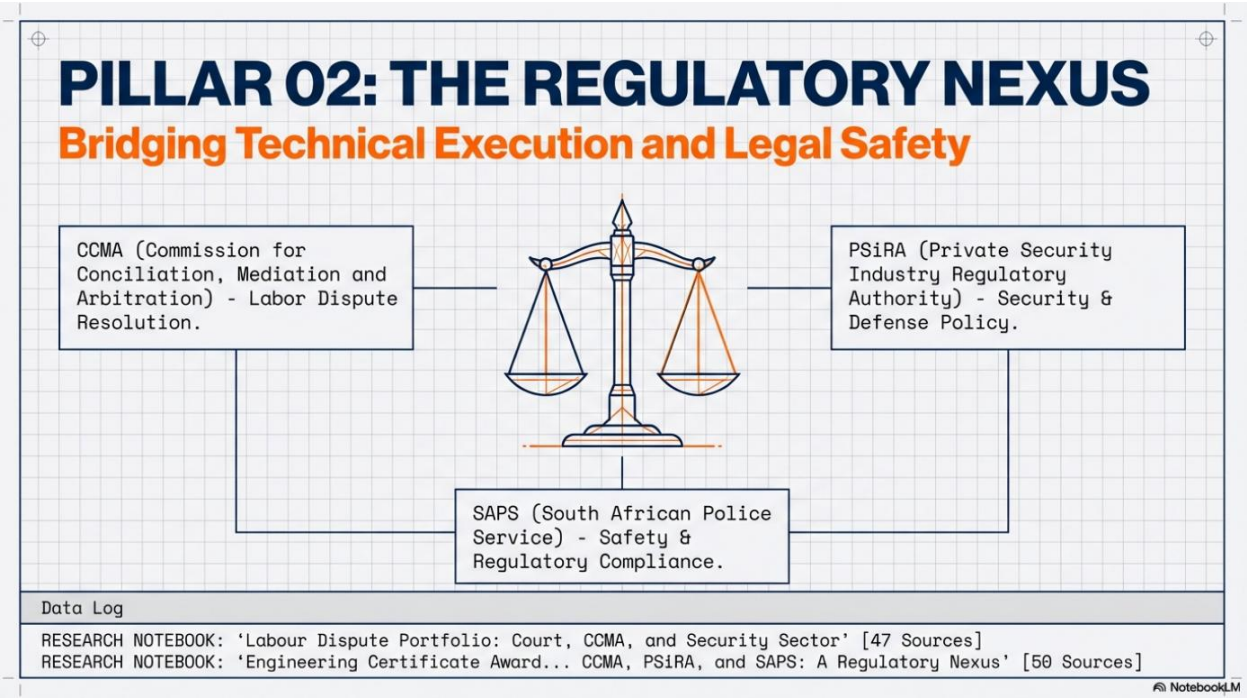
Calculus models for cost/time resource allocation

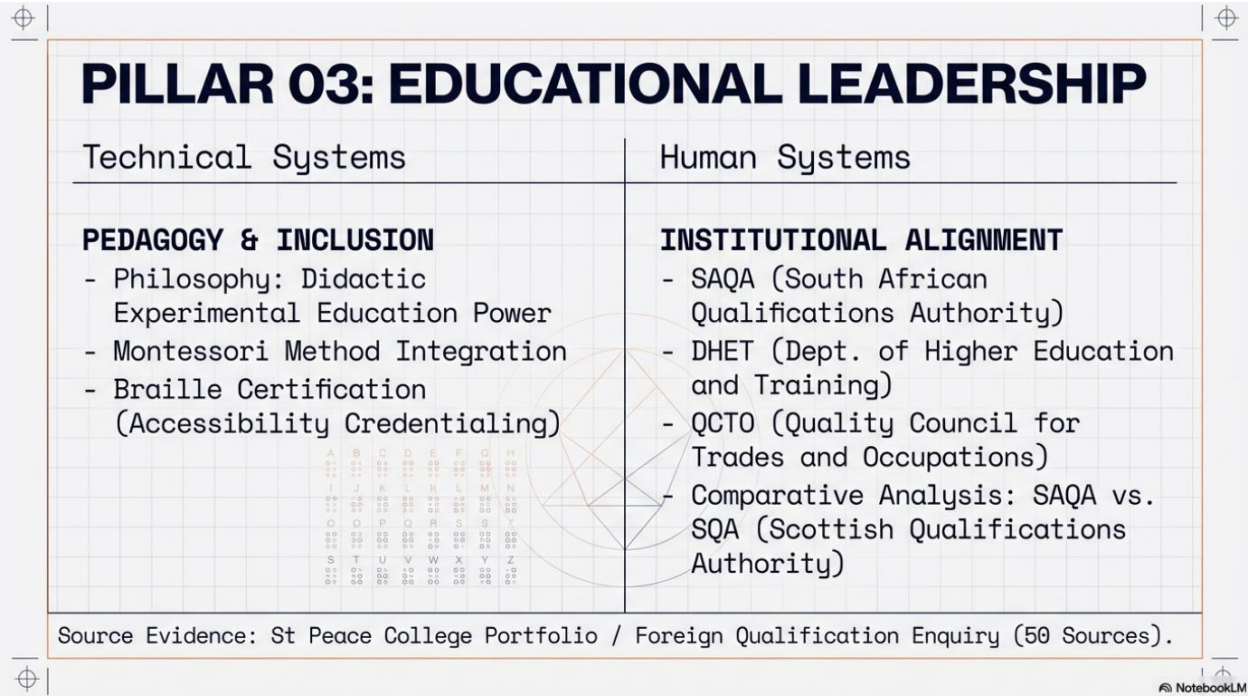
AIU Electrical Engineering Master Curriculum and Research

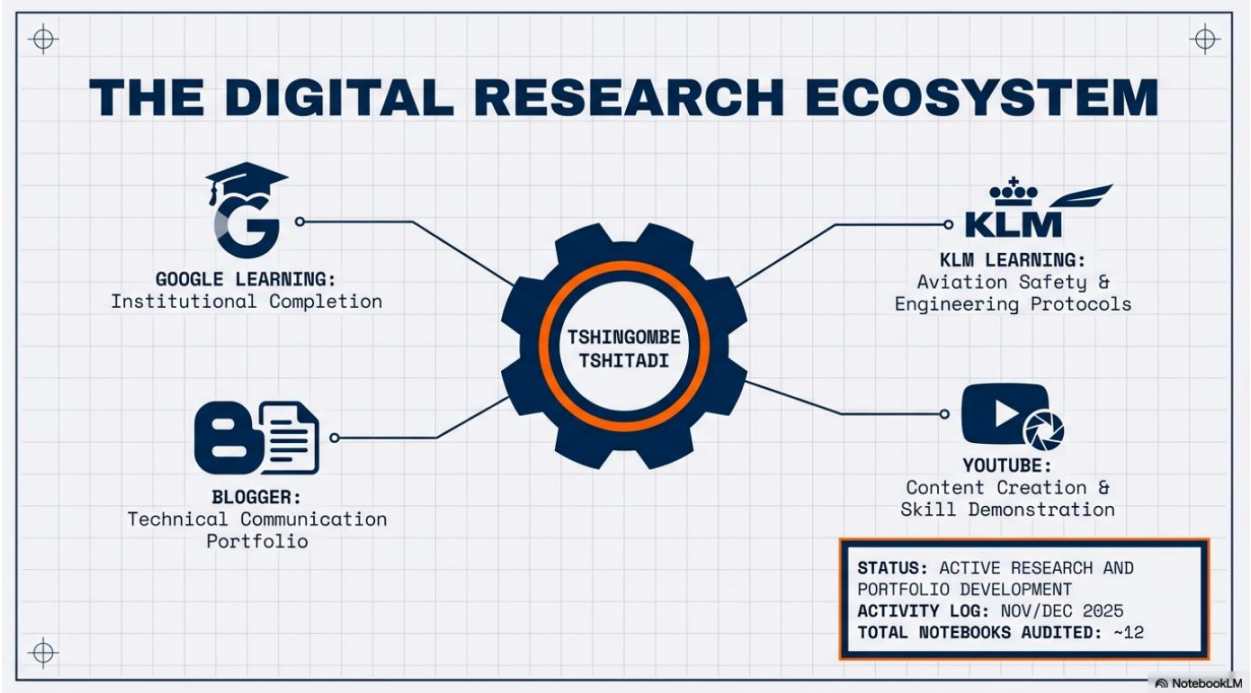
VERIFIED SOURCE // 50 CITATIONS // NOV 2025

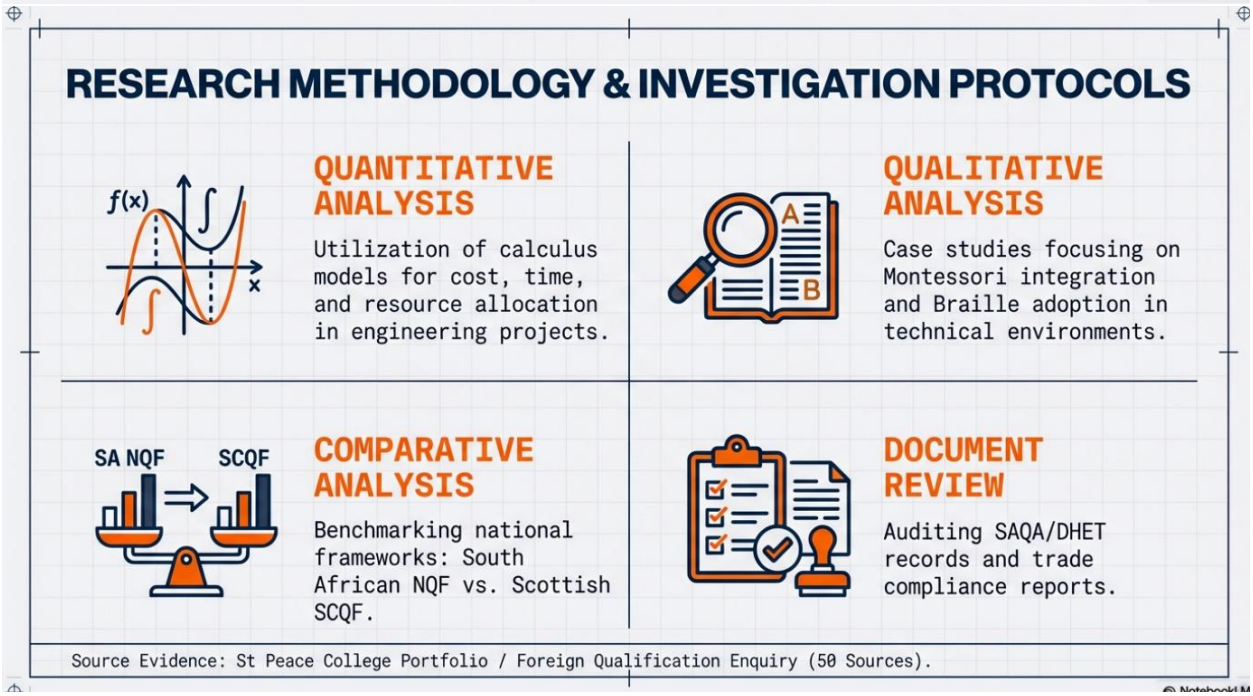
Associated Log: Credentialed Engineering Framework and Technical Documentation Automation (10 Sources).

NotebookLM


PILLAR 02: THE REGULATORY NEXUS
Bridging Technical Execution and Legal Safety
CCMA (Commission for Conciliation, Mediation and Arbitration) - Labor Dispute Resolution.
PSiRA (Private Security Industry Regulatory Authority) - Security & Defense Policy.
SAPS (South African Police Service) - Safety & Regulatory Compliance.
Data Log
RESEARCH NOTEBOOK: 'Labour Dispute Portfolio: Court, CCMA, and Security Sector' [47 Sources]
RESEARCH NOTEBOOK: 'Engineering Certificate Award... CCMA, PSiRA, and SAPS: A Regulatory Nexus' [50 Sources]
NotebookLM

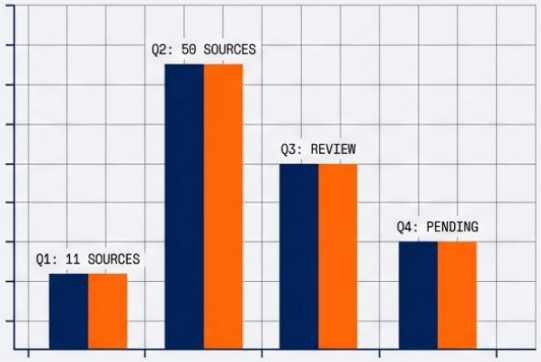

PILLAR 03: EDUCATIONAL LEADERSHIP
Technical Systems
Human Systems
PEDAGOGY & INCLUSION
- Philosophy: Didactic Experimental Education Power
- Montessori Method Integration
- Braille Certification (Accessibility Credentialing)
INSTITUTIONAL ALIGNMENT
- SAQA (South African Qualifications Authority)
- DHET (Dept. of Higher Education and Training)
- QCTO (Quality Council for Trades and Occupations)
- Comparative Analysis: SAQA vs. SQA (Scottish Qualifications Authority)
Source Evidence: St Peace College Portfolio / Foreign Qualification Enquiry (50 Sources).
NotebookLM


THE DIGITAL RESEARCH ECOSYSTEM
GOOGLE LEARNING:
Institutional Completion
BLOGGER:
Technical Communication
Portfolio
TSHINGOMBE
TSHITADI
KLM
KLM LEARNING:
Aviation Safety &
Engineering Protocols
YOUTUBE:
Content Creation &
Skill Demonstration
STATUS: ACTIVE RESEARCH AND
PORTFOLIO DEVELOPMENT
ACTIVITY LOG: NOV/DEC 2025
TOTAL NOTEBOOKS AUDITED: ~12
NotebookLM


RESEARCH METHODOLOGY & INVESTIGATION PROTOCOLS
f(x)
x
QUANTITATIVE ANALYSIS
Utilization of calculus models for cost, time, and resource allocation in engineering projects.
A
B
QUALITATIVE ANALYSIS
Case studies focusing on Montessori integration and Braille adoption in technical environments.
SA NQF
SCQF
COMPARATIVE ANALYSIS
Benchmarking national frameworks: South African NQF vs. Scottish SCQF.
DOCUMENT REVIEW
Auditing SAQA/DHET records and trade compliance reports.
Source Evidence: St Peace College Portfolio / Foreign Qualification Enquiry (50 Sources).

CAREER ANALYTICS & VOCATIONAL RESILIENCE

PERFORMANCE ANALYTICS



Data extracted from verified system logs. 0.5pt precision lines.

ANALYTIC NOTEBOOKS

- **Technical Auditing and Vocational Credential Resilience**
  Status: 11 Sources → AUDIT LOG 101
- **LinkedIn Content Performance Analytics**
  Status: 50 Sources → DATA REPORT 2023-A
- **Global Engineering Career Exhibition Outcome Review**
  Space Mono → FIELD NOTES & FINDINGS

KEY INSIGHT

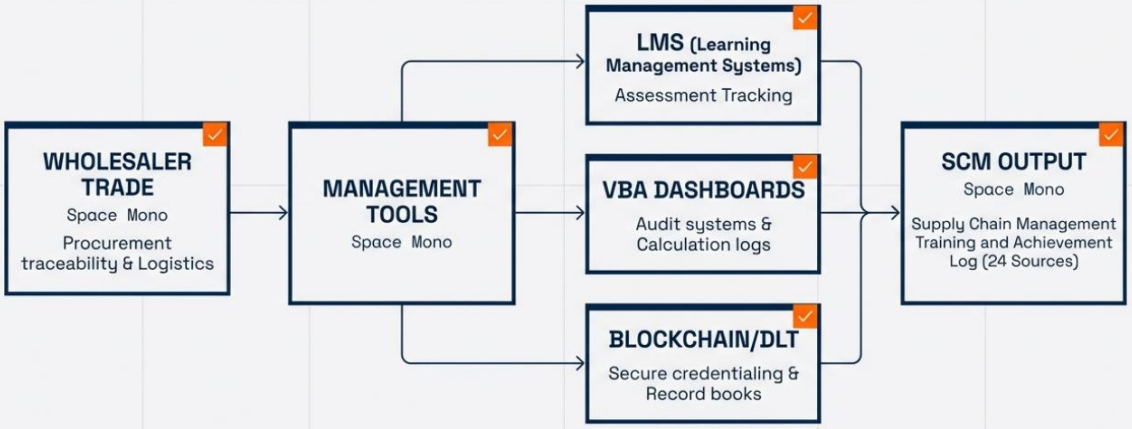
OBJECTIVE: Neue Haas Grotesk Display (Bold, Orange):
Utilizing data forms and the "Certified Record of Research Achievement" to monitor professional growth, content reach, and vocational resilience.

Source Evidence: Master System Logs, Document Review & Performance Audit (81 Sources). Verified through internal data management records.

NotebookLM

MANAGEMENT SYSTEMS & TRADE OPERATIONS

Neue Haas Grotesk Display Bold



Source Evidence: Master System Logs, Document Review & Performance Audit (81 Sources). Verified through internal data management records. Space Mono

NotebookLM

ENGINEERING ECONOMICS & POLICY FRAMEWORKS

Neue Haas Grotesk Display Bold

TOOL //	APPLICATION //	DELIVERABLE
CBA / NPV	Cost-Benefit Analysis & Net Present Value →	Calculation Logs →
TARIFF STRUCTURES	Analysis of Utility and Trade Tariffs	Decision Trees
INCENTIVES	Economic Drivers in Trade →	Compliance Matrices →

> “Policy and Economics: Incentives, CBA/NPV, tariff structures.” - UserForm 90004444

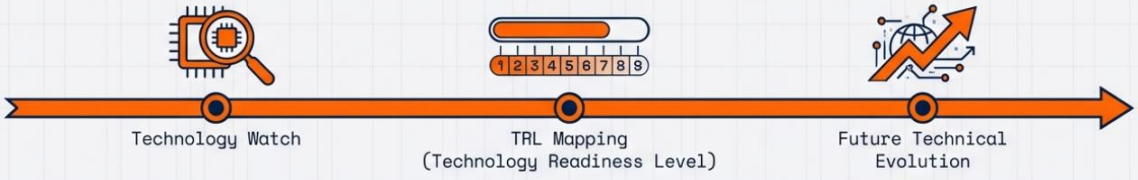
Source Evidence: Master System Logs, Document Review & Performance Audit (81 Sources). Verified through internal data management records.

NotebookLM

ECOLOGICAL IMPACT & FUTURE INNOVATION

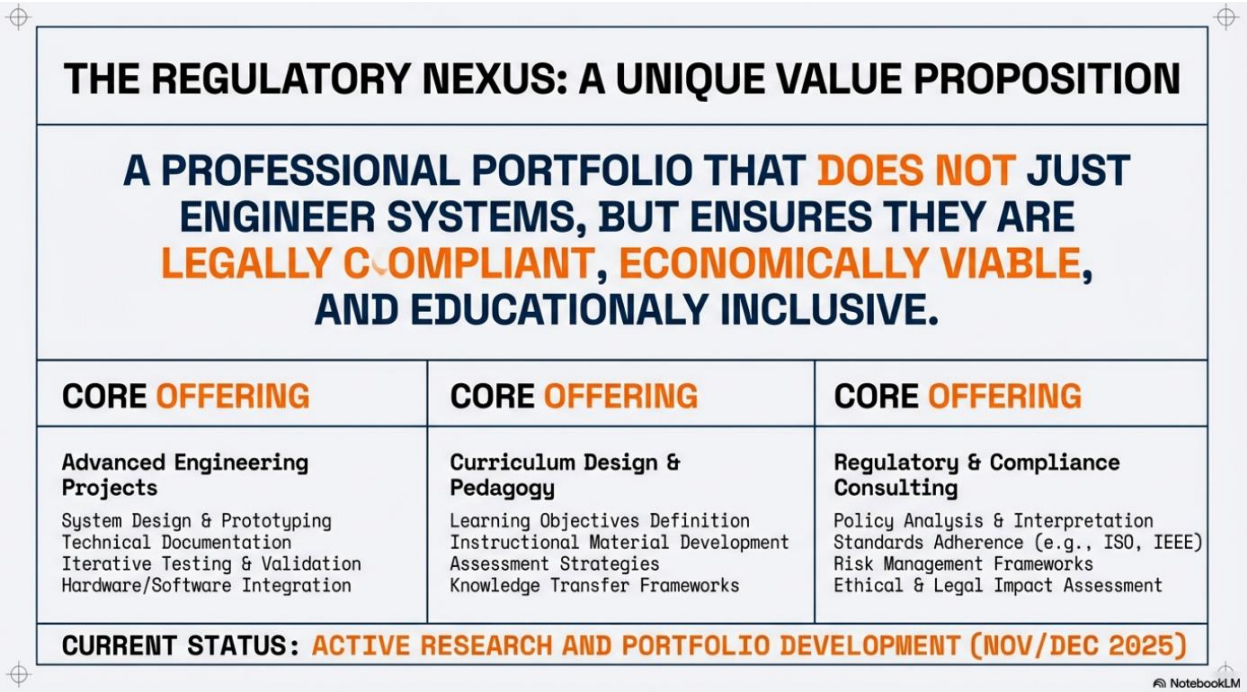
ENVIRONMENTAL SAFEGUARDS

FUTURE TRENDS & TECHNOLOGY WATCH

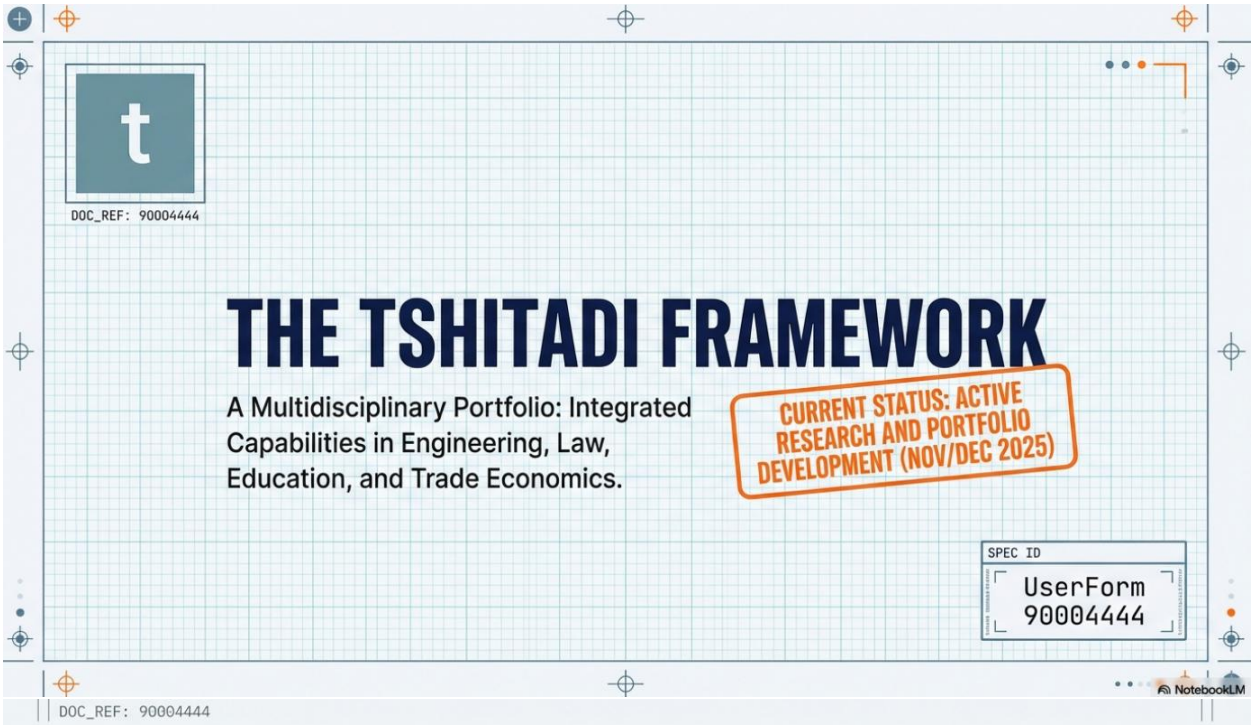


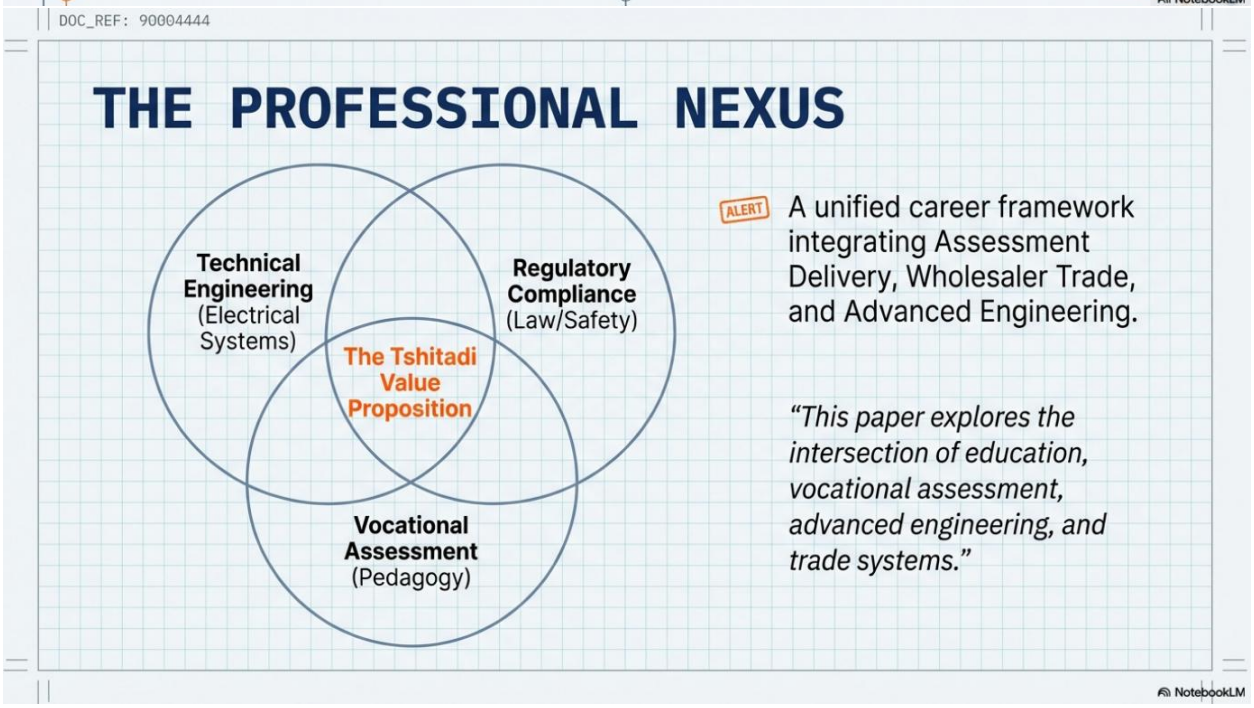
Source Evidence: Master System Logs, Document Review & Performance Audit (81 Sources). Verified through internal data management records. Space Mono

NotebookLM


THE REGULATORY NEXUS: A UNIQUE VALUE PROPOSITION
A PROFESSIONAL PORTFOLIO THAT DOES NOT JUST ENGINEER SYSTEMS, BUT ENSURES THEY ARE LEGALLY COMPLIANT, ECONOMICALLY VIABLE, AND EDUCATIONALY INCLUSIVE.
CORE OFFERING
Advanced Engineering Projects
System Design & Prototyping
Technical Documentation
Iterative Testing & Validation
Hardware/Software Integration
CORE OFFERING
Curriculum Design & Pedagogy
Learning Objectives Definition
Instructional Material Development
Assessment Strategies
Knowledge Transfer Frameworks
CORE OFFERING
Regulatory & Compliance Consulting
Policy Analysis & Interpretation
Standards Adherence (e.g., ISO, IEEE)
Risk Management Frameworks
Ethical & Legal Impact Assessment
CURRENT STATUS: ACTIVE RESEARCH AND PORTFOLIO DEVELOPMENT (NOV/DEC 2025)
NotebookLM

CONTACT & REFERENCES
TSHINGOMBE TSHITADI
Multidisciplinary Researcher & Engineer
Linked Platforms: Blogger // LinkedIn // Google Learning
KEY INSTITUTIONAL ASSOCIATIONS
- Atlantic International University (AIU)
- St Peace College
- South African Qualifications Authority (SAQA)
- DHET / QCTO
NotebookLM


t
DOC_REF: 90004444
THE TSHITADI FRAMEWORK
A Multidisciplinary Portfolio: Integrated Capabilities in Engineering, Law, Education, and Trade Economics.
CURRENT STATUS: ACTIVE RESEARCH AND PORTFOLIO DEVELOPMENT (NOV/DEC 2025)
SPEC ID
UserForm
90004444
NotebookLM


DOC_REF: 90004444
THE PROFESSIONAL NEXUS
Technical Engineering (Electrical Systems)
Regulatory Compliance (Law/Safety)
The Tshitadi Value Proposition
Vocational Assessment (Pedagogy)
ALERT
A unified career framework integrating Assessment Delivery, Wholesaler Trade, and Advanced Engineering.
"This paper explores the intersection of education, vocational assessment, advanced engineering, and trade systems."
NotebookLM

DOC_REF: 90004445

DIGITAL FOOTPRINT & VERIFICATION PROTOCOLS

A consolidated 'License Certificate' and 'Master Portfolio' audited across distributed digital learning ledgers.

Microsoft Learn

Azure, Power BI, Data Management

VERIFIED ARTIFACT

Course Completion & Institutional Delivery (St Peace College)

KLM Royal Dutch Airlines

Aviation Safety & Internal Corporate Compliance

Blogger YouTube

Content Creation, Technical Communication, Portfolio Evidence

NotebookLM

DOC_REF: 90004446

PILLAR 1: ADVANCED ENGINEERING & TRADE THEORY

KEY COMPETENCIES

- ☒ Electrical Trade Theory (Syllabus 2021)
- ☒ Fault currents, power factors, and efficiency metrics
- ☒ Technical Documentation Automation

DATA VOLUME

Engineering Electrical Career and Electrical Trade Theory

49 Sources

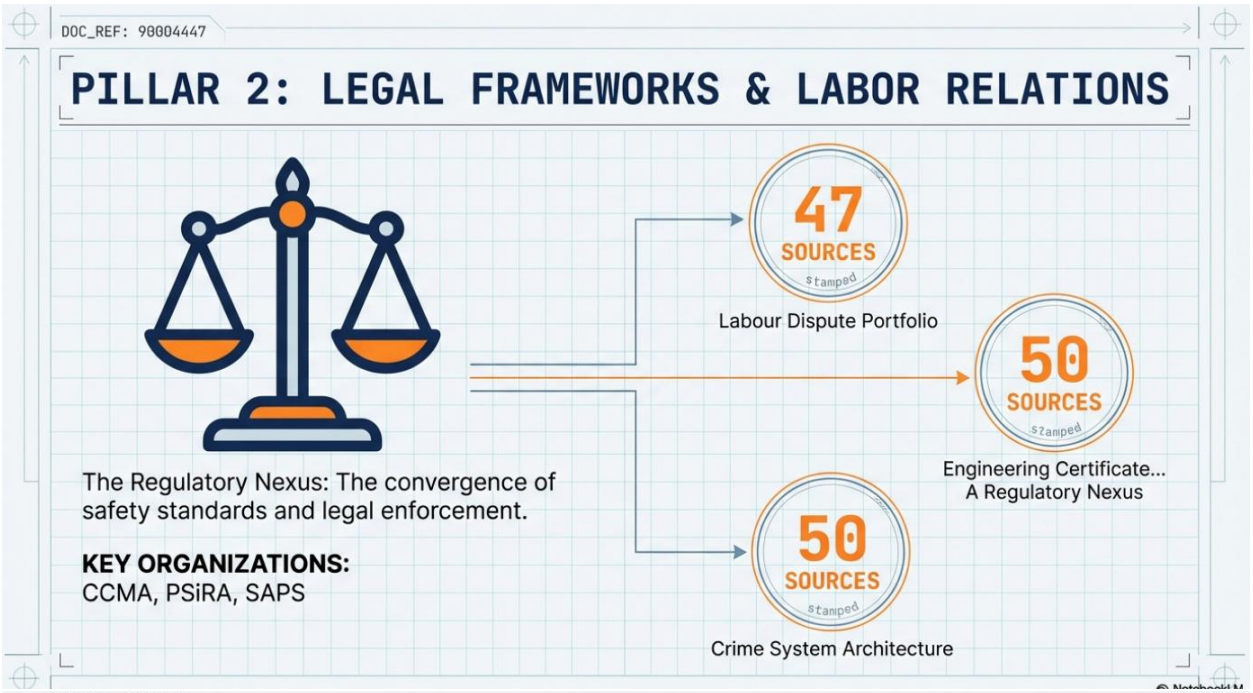
Credentialed Engineering Framework

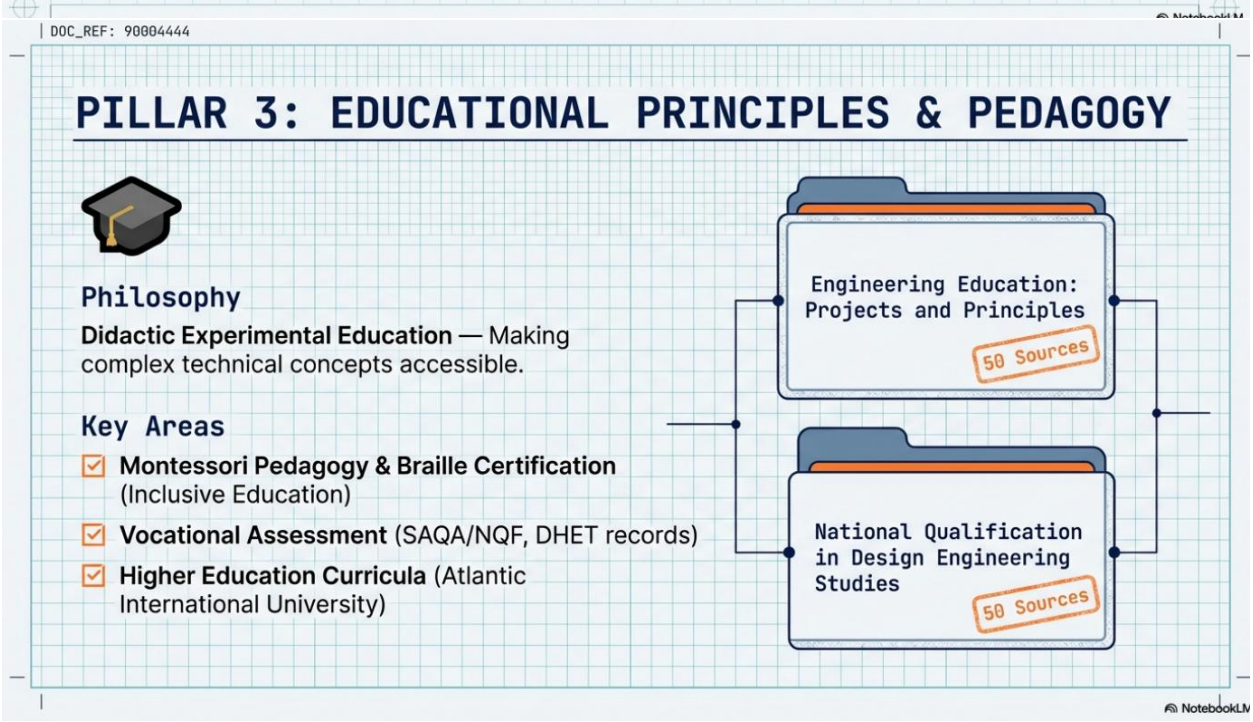
10 Sources

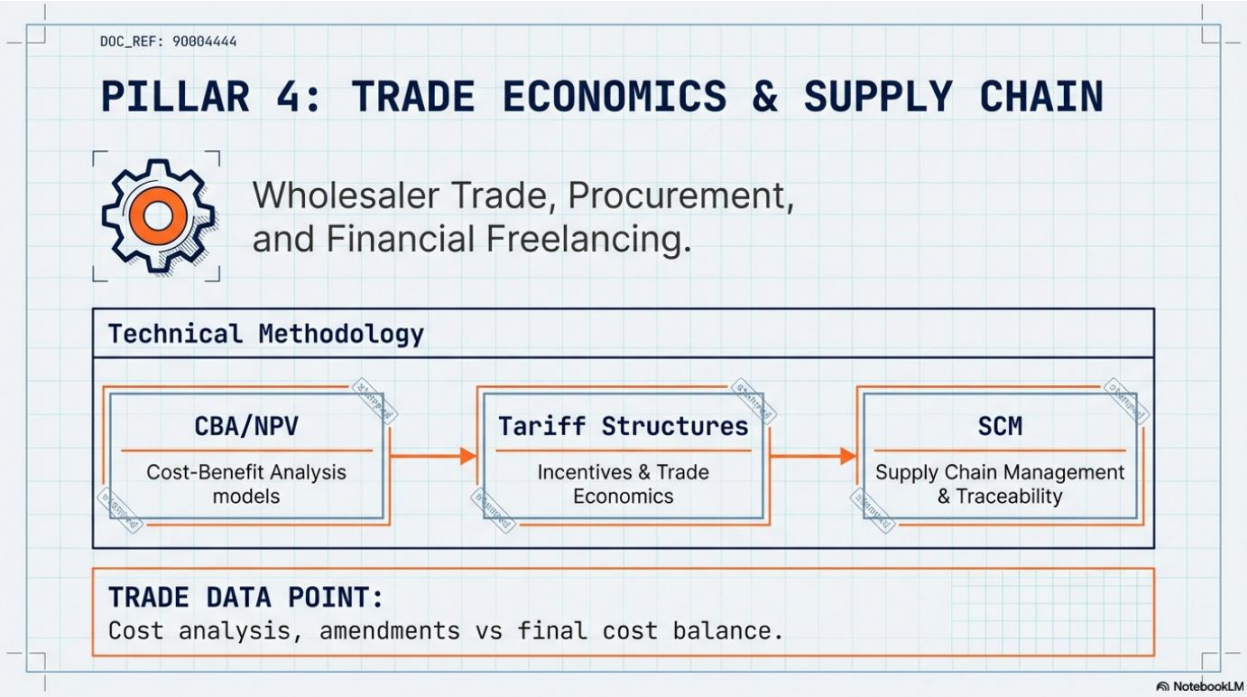
TECHNICAL DATA

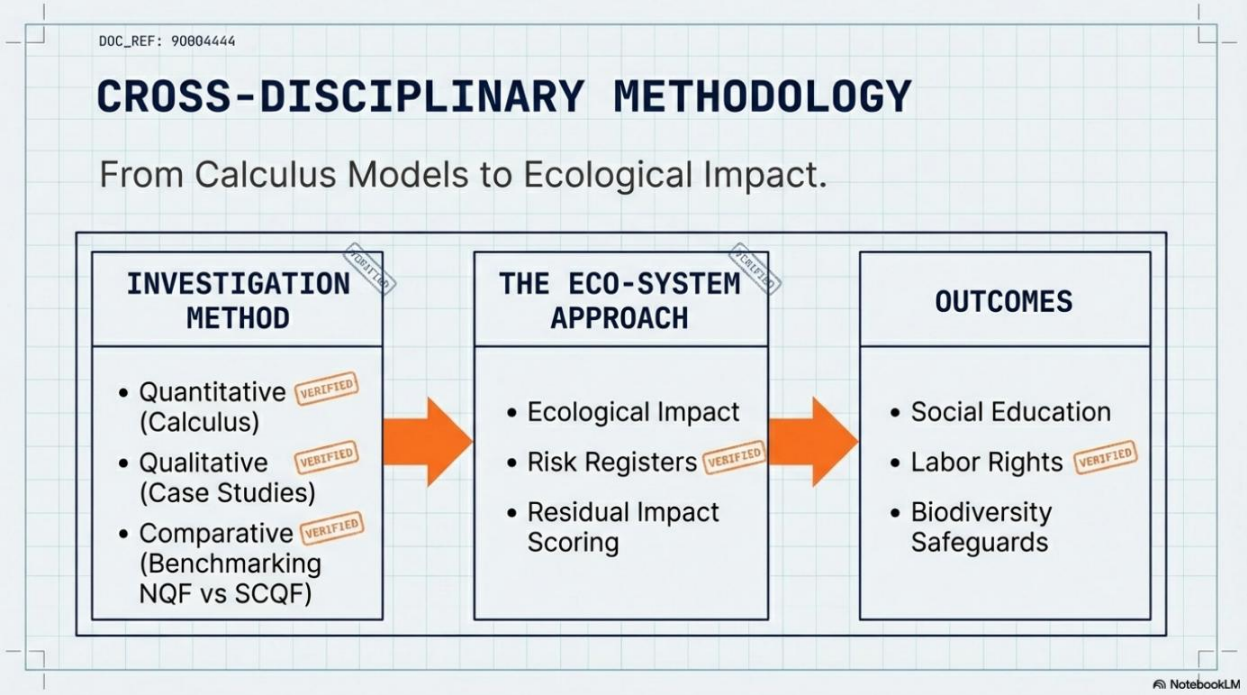
Deliverables: calculation logs, decision trees, compliance matrices.

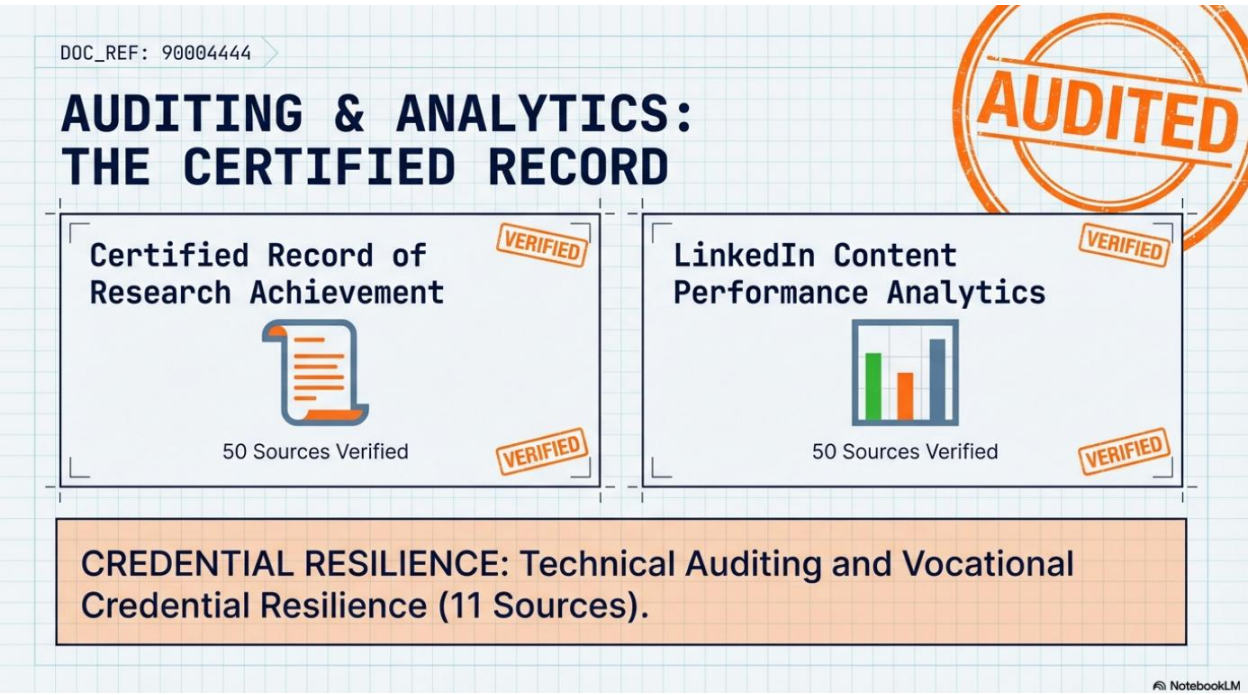
NotebookLM

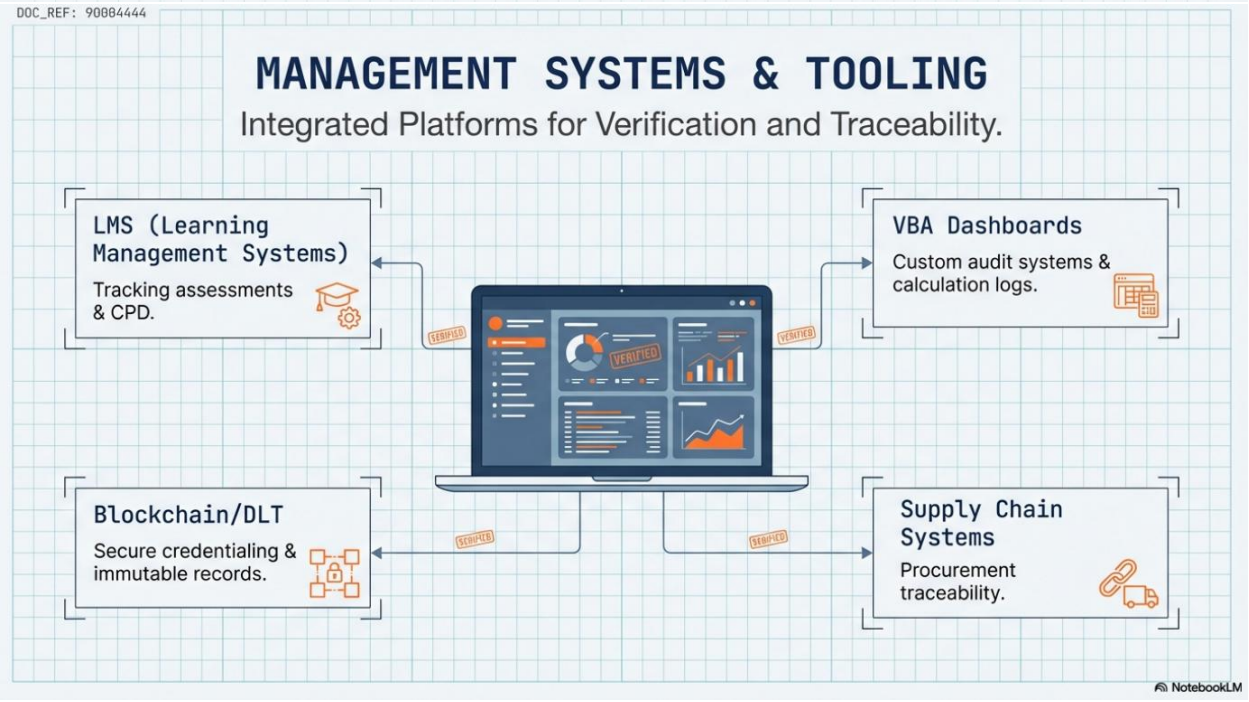

DOC_REF: 90004447
PILLAR 2: LEGAL FRAMEWORKS & LABOR RELATIONS
47 SOURCES
stamped
Labour Dispute Portfolio
50 SOURCES
stamped
Engineering Certificate... A Regulatory Nexus
The Regulatory Nexus: The convergence of safety standards and legal enforcement.
KEY ORGANIZATIONS:
CCMA, PSiRA, SAPS
50 SOURCES
stamped
Crime System Architecture

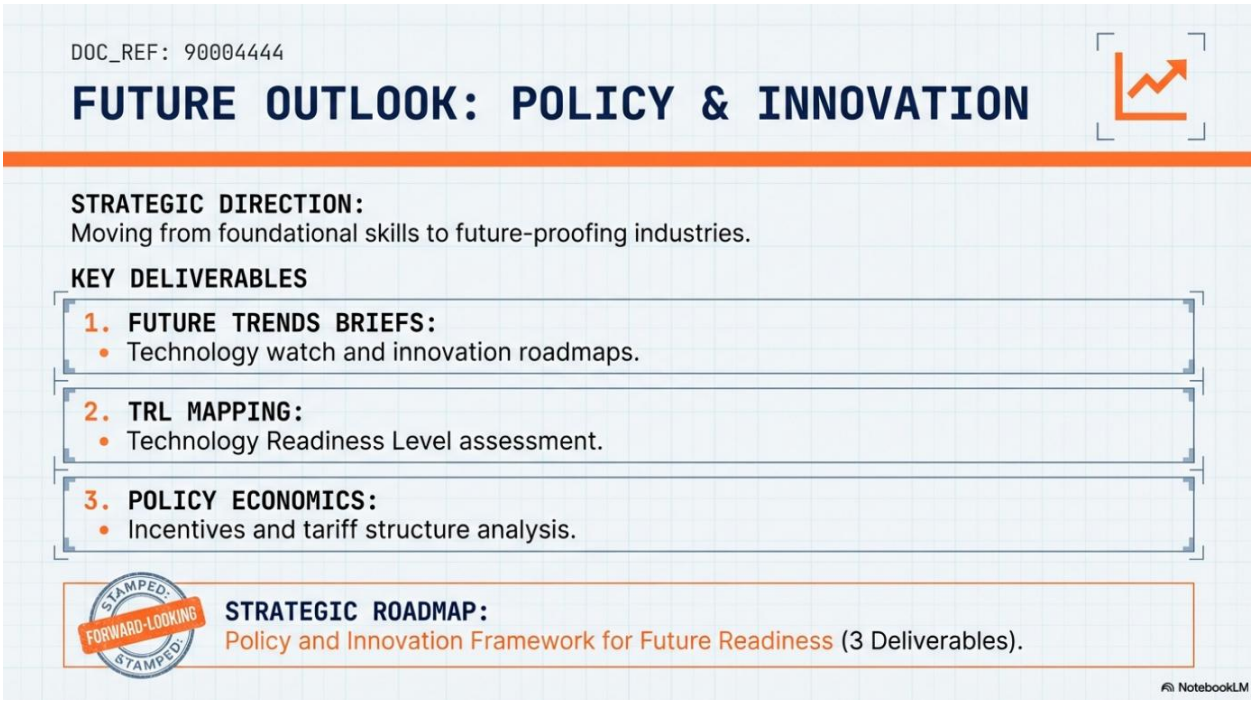

DOC_REF: 90004444
PILLAR 3: EDUCATIONAL PRINCIPLES & PEDAGOGY
Philosophy
Didactic Experimental Education — Making complex technical concepts accessible.
Key Areas
Montessori Pedagogy & Braille Certification (Inclusive Education)
Vocational Assessment (SAQA/NQF, DHET records)
Higher Education Curricula (Atlantic International University)
Engineering Education: Projects and Principles
50 Sources
National Qualification in Design Engineering Studies
50 Sources
NotebookLM

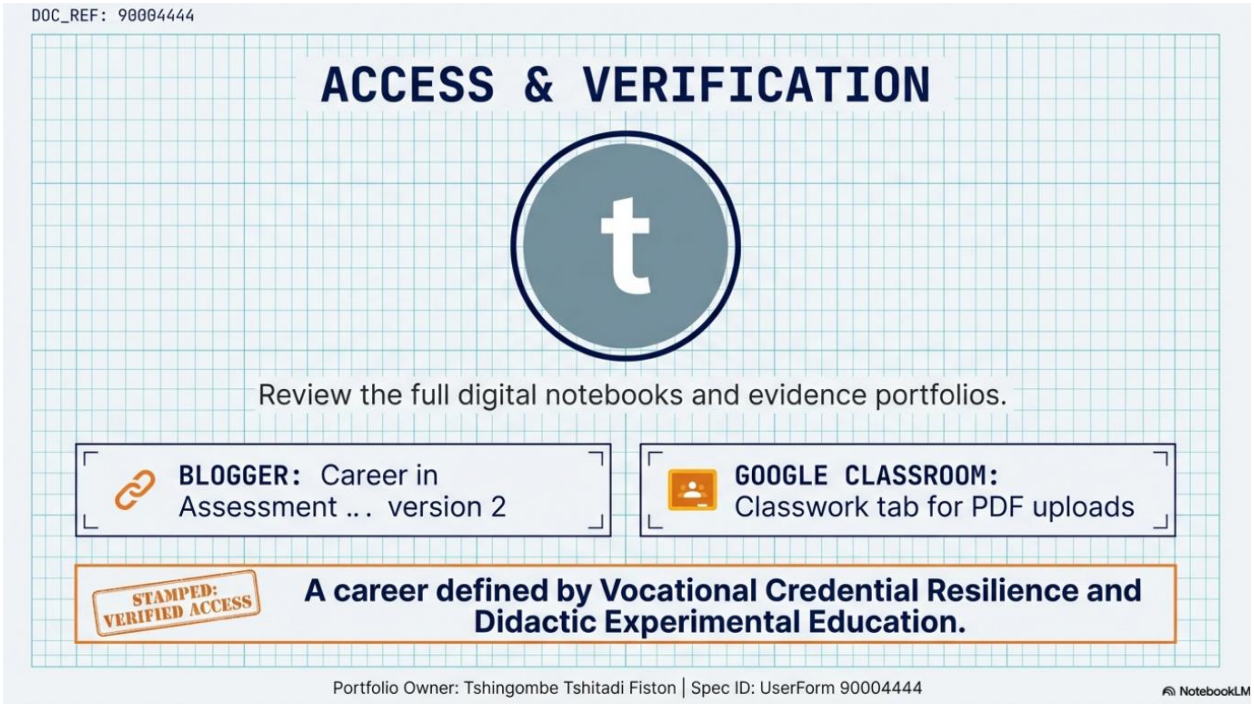

DOC_REF: 90804444
PILLAR 4: TRADE ECONOMICS & SUPPLY CHAIN
Wholesaler Trade, Procurement, and Financial Freelancing.
Technical Methodology
CBA/NPV
Cost-Benefit Analysis models
Tariff Structures
Incentives & Trade Economics
SCM
Supply Chain Management & Traceability
TRADE DATA POINT:
Cost analysis, amendments vs final cost balance.
NotebookLM


DOC_REF: 90804444
CROSS-DISCIPLINARY METHODOLOGY
From Calculus Models to Ecological Impact.
INVESTIGATION METHOD
• Quantitative (Calculus) VERIFIED
• Qualitative (Case Studies) VERIFIED
• Comparative (Benchmarking NQF vs SCQF) VERIFIED
THE ECO-SYSTEM APPROACH
• Ecological Impact
• Risk Registers VERIFIED
• Residual Impact Scoring
OUTCOMES
• Social Education
• Labor Rights VERIFIED
• Biodiversity Safeguards
NotebookLM


DOC_REF: 90004444
AUDITED
AUDITING & ANALYTICS:
THE CERTIFIED RECORD
Certified Record of Research Achievement
VERIFIED
50 Sources Verified
VERIFIED
LinkedIn Content Performance Analytics
VERIFIED
50 Sources Verified
VERIFIED
CREDENTIAL RESILIENCE: Technical Auditing and Vocational Credential Resilience (11 Sources).
NotebookLM


DOC_REF: 90004444
MANAGEMENT SYSTEMS & TOOLING
Integrated Platforms for Verification and Traceability.
LMS (Learning Management Systems)
Tracking assessments & CPD.
VBA Dashboards
Custom audit systems & calculation logs.
VERIFIED
Blockchain/DLT
Secure credentialing & immutable records.
Supply Chain Systems
Procurement traceability.
NotebookLM


DOC_REF: 90004444
FUTURE OUTLOOK: POLICY & INNOVATION
STRATEGIC DIRECTION:
Moving from foundational skills to future-proofing industries.
KEY DELIVERABLES
1. FUTURE TRENDS BRIEFS:
• Technology watch and innovation roadmaps.
2. TRL MAPPING:
• Technology Readiness Level assessment.
3. POLICY ECONOMICS:
• Incentives and tariff structure analysis.
STAMPED: FORWARD-LOOKING STAMPED:
STRATEGIC ROADMAP:
Policy and Innovation Framework for Future Readiness (3 Deliverables).
NotebookLM

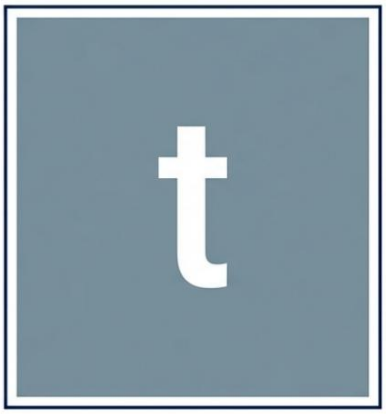

DOC_REF: 90004444
ACCESS & VERIFICATION
t
Review the full digital notebooks and evidence portfolios.
BLOGGER: Career in Assessment … version 2
GOOGLE CLASSROOM: Classwork tab for PDF uploads
STAMPED: VERIFIED ACCESS
A career defined by Vocational Credential Resilience and Didactic Experimental Education.
Portfolio Owner: Tshingombe Tshitadi Fiston | Spec ID: UserForm 90004444
NotebookLM

THE INTEGRATED ENGINEERING & REGULATORY PORTFOLIO

A Multidisciplinary Framework by Tshingombe Tshitadi

- Advanced Engineering & Trade Theory
- Legal Regulatory Frameworks (Labor/Security)
- Educational Curriculum Design
- Vocational Analytics & Auditing

Ref: Career in Assessment, Education, Wholesaler Trade, and Advanced Engineering (Version 2)



NotebookLM

THE 'CAREER IN ASSESSMENT' FRAMEWORK

CORE THESIS

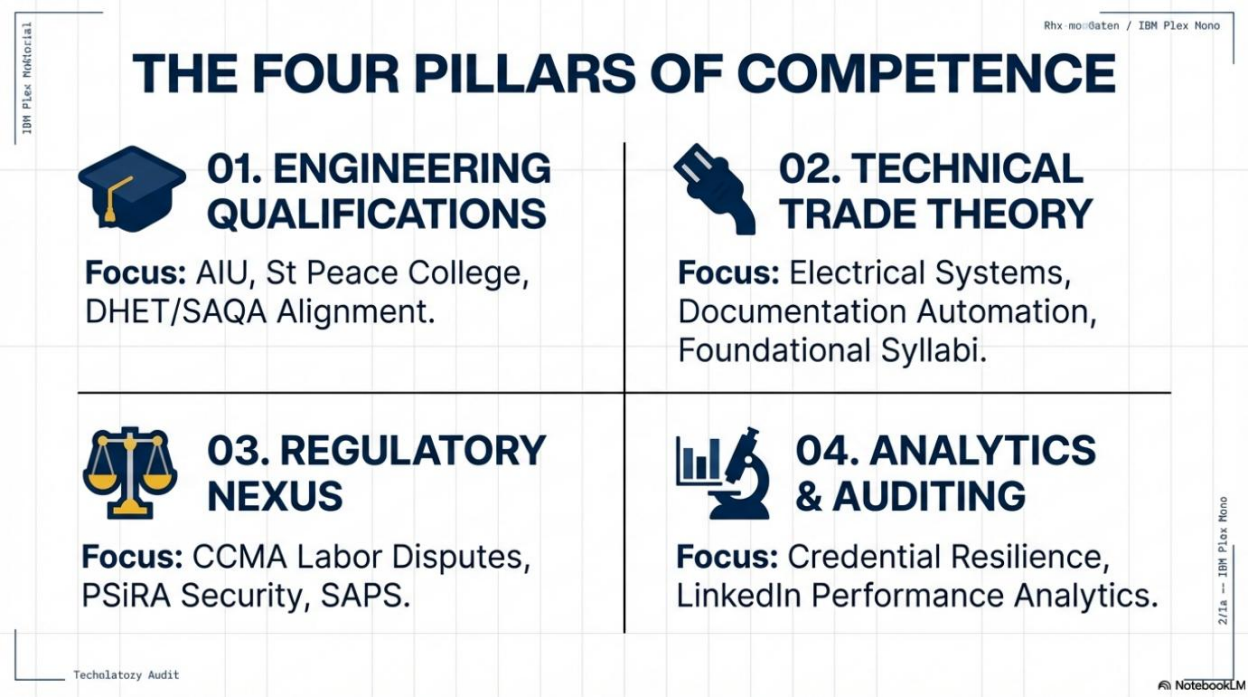
An intersection of education, vocational assessment, advanced engineering, and trade systems.

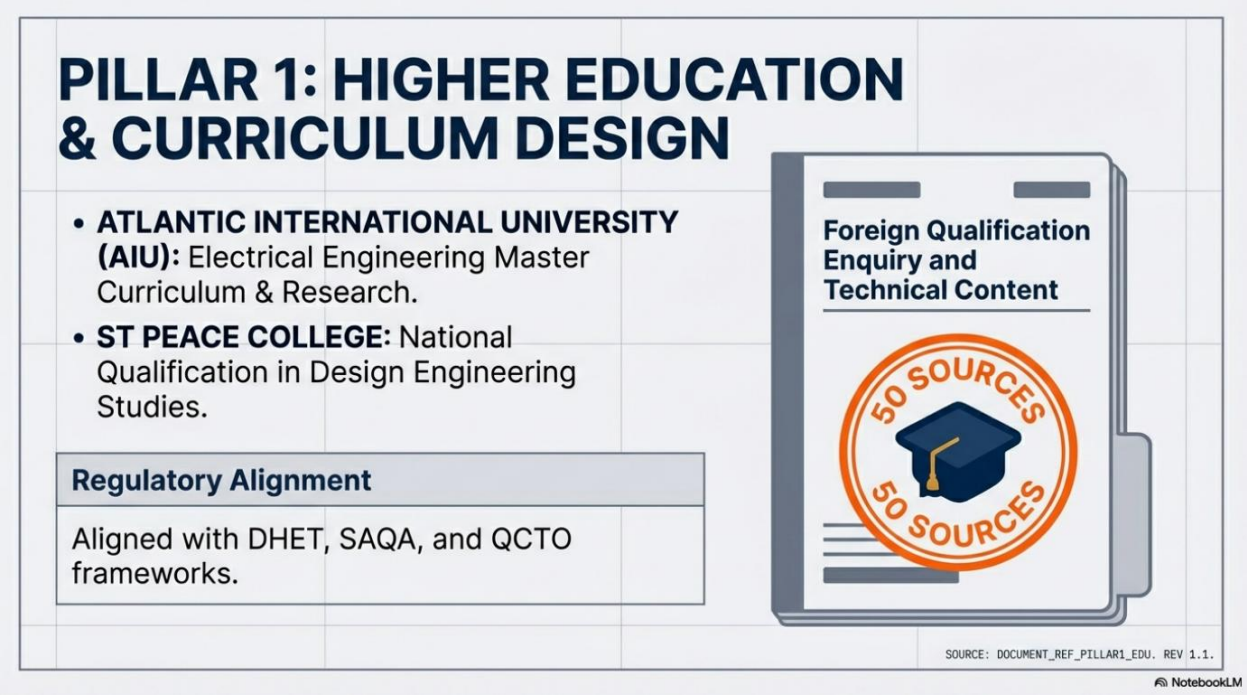
PROBLEM/SOLUTION

- CHALLENGE: Standard biographies fail to capture the synergy between hard technical skills and legal compliance.
- SOLUTION: A holistic career framework integrating financial freelancing, wholesaler trade, and inclusive pedagogy.

SOURCE: DOCUMENT_REF_72A-921/B. REV 1.0.

NotebookLM


IBM Plex Mokorial
Rhx·mo□daten / IBM Plex Mono
THE FOUR PILLARS OF COMPETENCE
01. ENGINEERING QUALIFICATIONS
Focus: AIU, St Peace College, DHET/SAQA Alignment.
02. TECHNICAL TRADE THEORY
Focus: Electrical Systems, Documentation Automation, Foundational Syllabi.
03. REGULATORY NEXUS
Focus: CCMA Labor Disputes, PSiRA Security, SAPS.
04. ANALYTICS & AUDITING
Focus: Credential Resilience, LinkedIn Performance Analytics.
2/1a — IBM Plex Mono
Techolatozy Audit
NotebookLM


PILLAR 1: HIGHER EDUCATION & CURRICULUM DESIGN
• ATLANTIC INTERNATIONAL UNIVERSITY (AIU): Electrical Engineering Master Curriculum & Research.
• ST PEACE COLLEGE: National Qualification in Design Engineering Studies.
Regulatory Alignment
Aligned with DHET, SAQA, and QCTO frameworks.
Foreign Qualification Enquiry and Technical Content
50 SOURCES
50 SOURCES
SOURCE: DOCUMENT_REF_PILLAR1_EDU. REV 1.1.
NotebookLM

PILLAR 2: TECHNICAL ENGINEERING & TRADE THEORY

CORE SYLLABUS

Engineering Electrical Career and Electrical Trade Theory: Foundational Syllabus 2021.

TECHNICAL OUTPUTS

- Credentialed Engineering Framework
- Technical Documentation Automation
- Performance Metrics: Power Factor, Fault Currents, Efficiency Analysis

Source Notebook: Foundational Syllabus (49 Sources)

3/4 — IBM Plex Mono

SOURCE: DOCUMENT_REF_PILLAR2_TECH_THEORY. REV 1.1.

NotebookLM

PILLAR 3: THE REGULATORY NEXUS

Intersection of Labor Law, Court Proceedings, and Security Policy

- CCMA (Commission for Conciliation, Mediation and Arbitration) - Labor Disputes
- PSiRA (Private Security Industry Regulatory Authority) - Security Sector Policy
- SAPS (South African Police Service) - Compliance & Safety

Sourced from 'Labour Dispute Portfolio' Notebook

3/4

SOURCE: DOCUMENT_REF_PILLAR3_REGULATORY.REV 1.1.

NotebookLM

PILLAR 4: CAREER ANALYTICS & AUDITING

METHODOLOGY

Technical Auditing and Vocational Credential Resilience.

INSIGHT

Data-driven tracking ensures the portfolio remains audit-ready.

PERFORMANCE ANALYTICS

LinkedIn Content Performance

Credential Resilience Indices

4/4 — IBM Plex Mono

4/4

SOURCE: DOCUMENT_REF_PILLAR4_ANALYTICS_AUDIT. REV 1.1.

NotebookLM

THE DIGITAL CERTIFICATION ECOSYSTEM

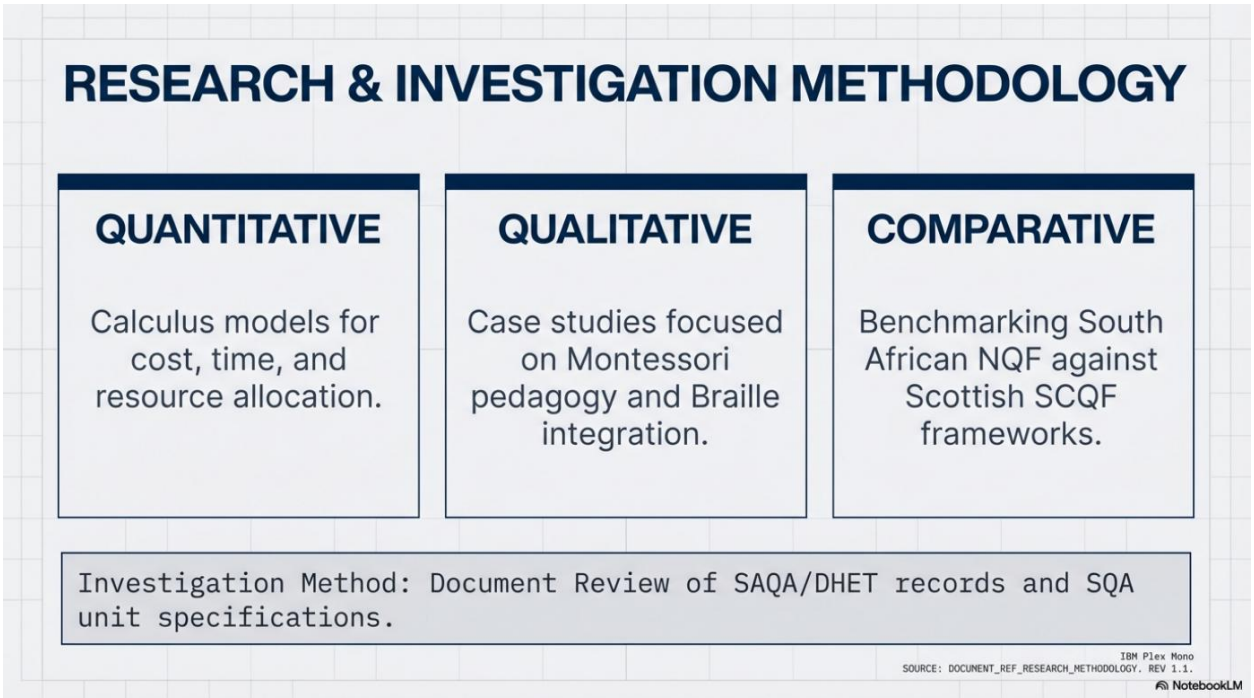
Verified Competence and Credential Integration.

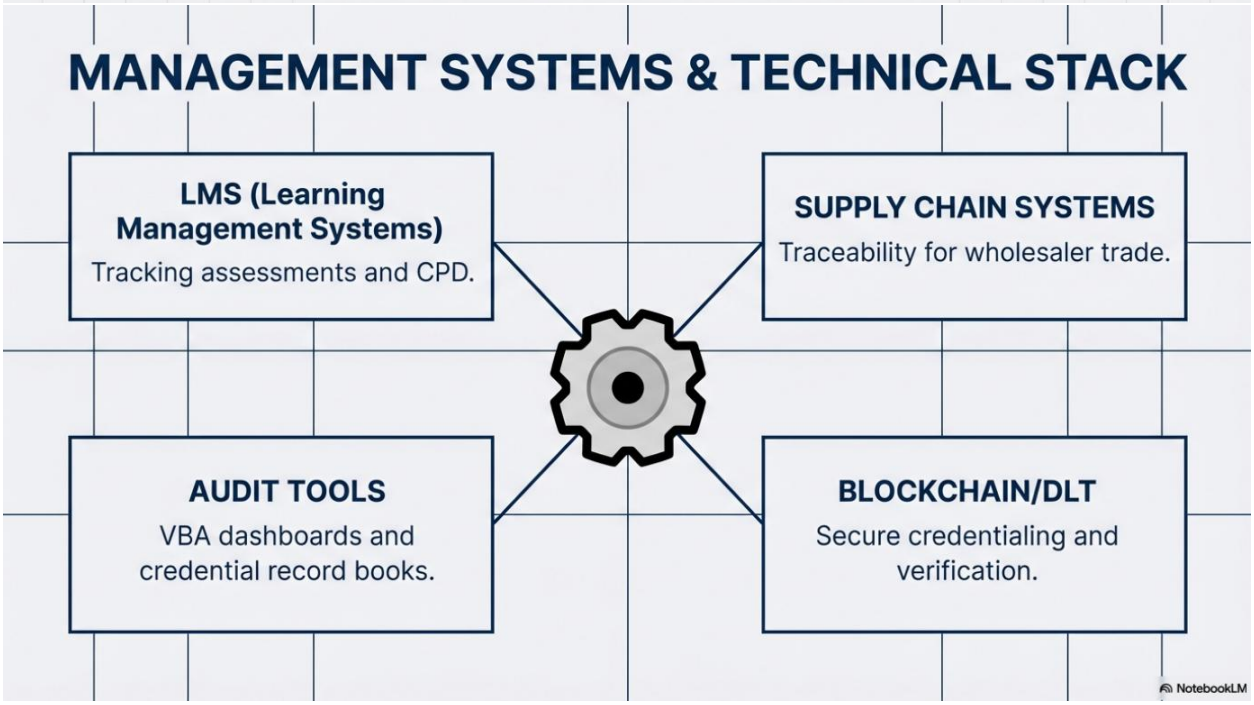
CERTIFICATION PLATFORMS	
G	**GOOGLE CLASSROOM** (Course Completion)
KLM	**KLM LEARNING** (Aviation/Safety)
⊞	**MICROSOFT LEARN** (Role-based Certifications)
▶	**BLOGGER/YOUTUBE** (Portfolio Evidence)

Verified Credential: Google Classroom Fundamentals

SOURCE: DOCUMENT_REF_DIGITAL_CERTIFICATION_ECOSYSTEM. REV 1.1.

NotebookLM


RESEARCH & INVESTIGATION METHODOLOGY
QUANTITATIVE
Calculus models for cost, time, and resource allocation.
QUALITATIVE
Case studies focused on Montessori pedagogy and Braille integration.
COMPARATIVE
Benchmarking South African NQF against Scottish SCQF frameworks.
Investigation Method: Document Review of SAQA/DHET records and SQA unit specifications.
IBM Plex Mono
SOURCE: DOCUMENT_REF_RESEARCH_METHODOLOGY. REV 1.1.
NotebookLM


MANAGEMENT SYSTEMS & TECHNICAL STACK
LMS (Learning Management Systems)
Tracking assessments and CPD.
SUPPLY CHAIN SYSTEMS
Traceability for wholesaler trade.
AUDIT TOOLS
VBA dashboards and credential record books.
BLOCKCHAIN/DLT
Secure credentialing and verification.
NotebookLM

INCLUSIVE EDUCATION & ACCESSIBILITY

Integrating Montessori pedagogy into engineering education.

DELIVERABLES

- Braille Awards for Accessibility
- Didactic Experimental Education Power
- Accessibility Indicators: Braille adoption & learner outcomes.

Source: Career Material in Didactic Experimental Education

NotebookLM

TECHNICAL DELIVERABLES & ARTIFACTS

01. CALCULATION LOGS
Engineering performance and trade cost models.

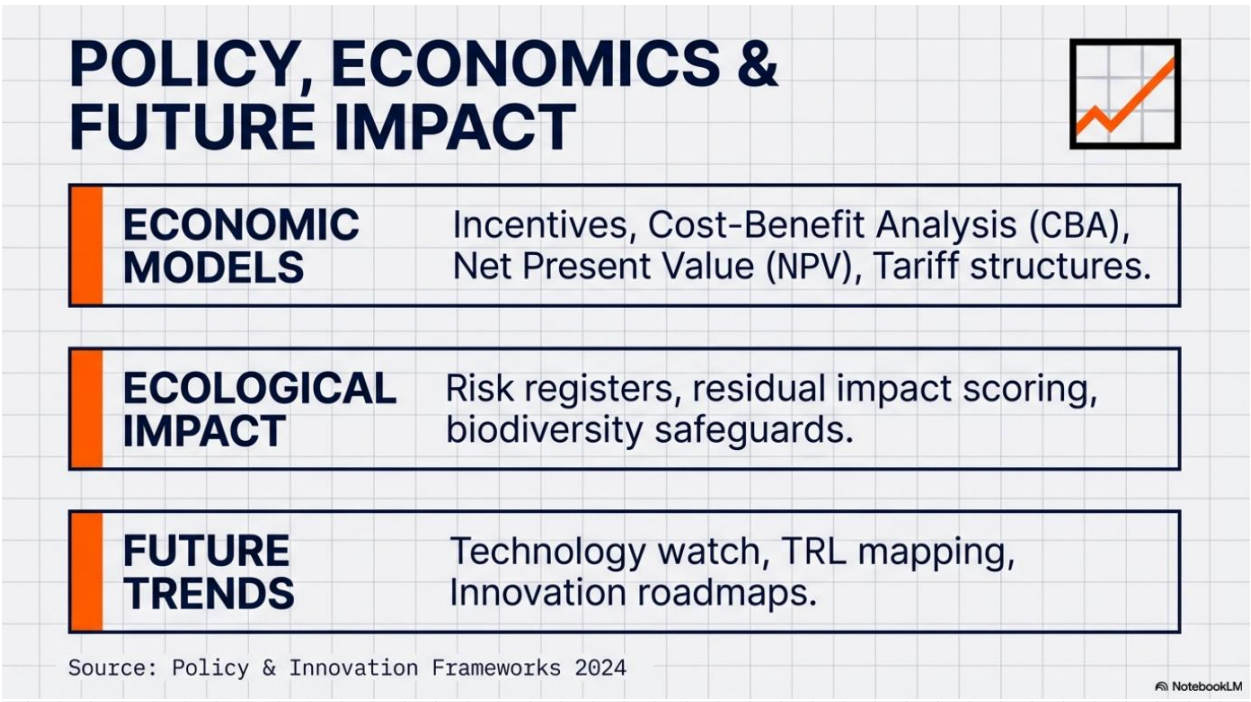
02. DECISION TREES
Risk analysis and procurement logic.

03. COMPLIANCE MATRICES
Regulatory alignment for CCMA/SAPS.

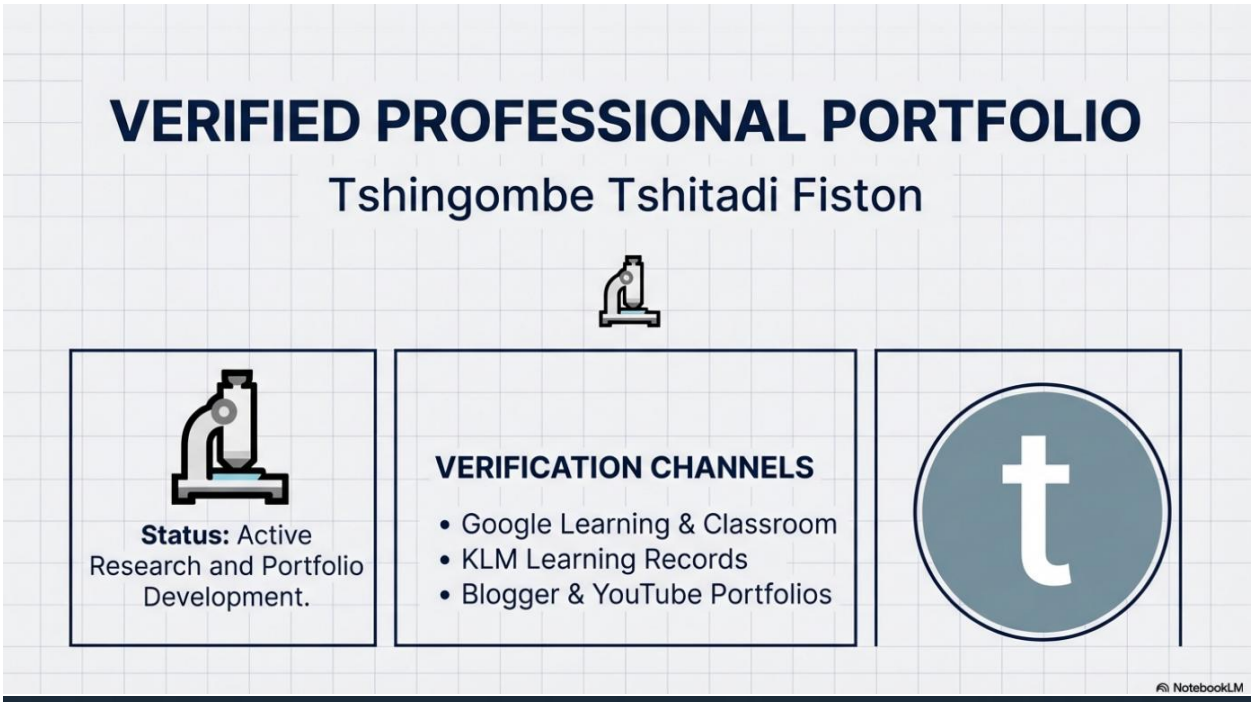
04. DASHBOARDS
Visualizing CPD-ready artifacts.

Source: Engineering & Regulatory Frameworks

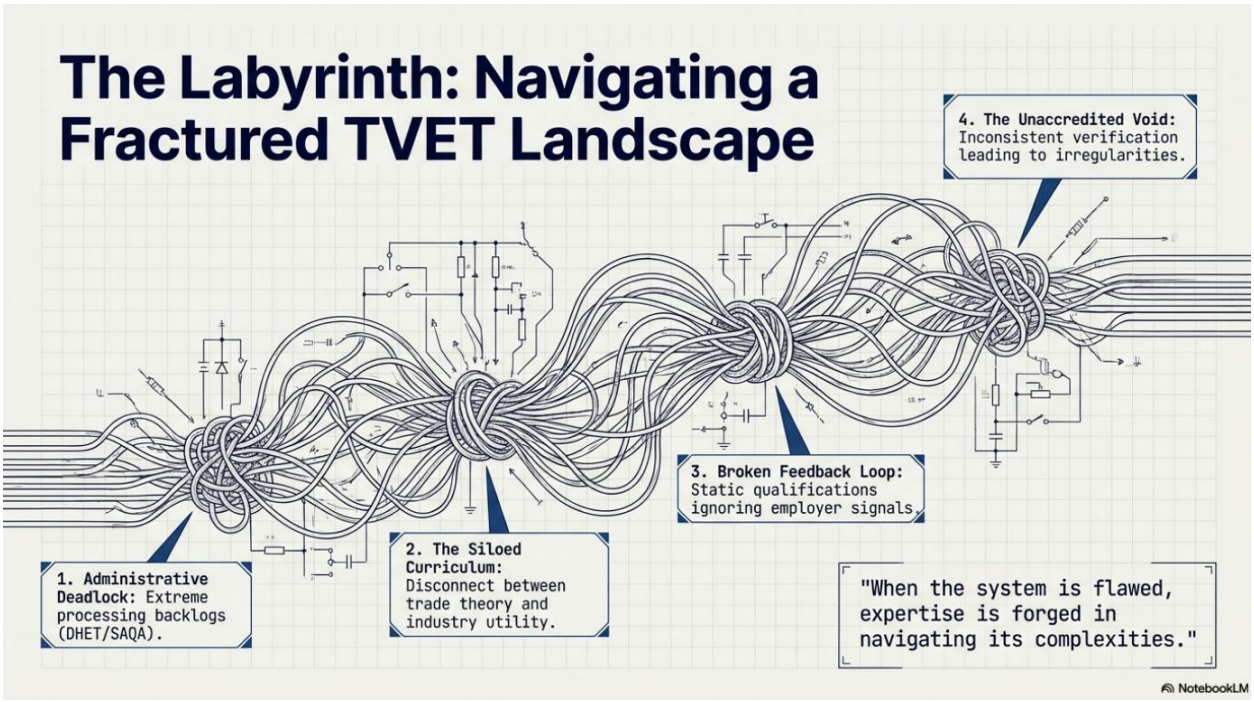
NotebookLM

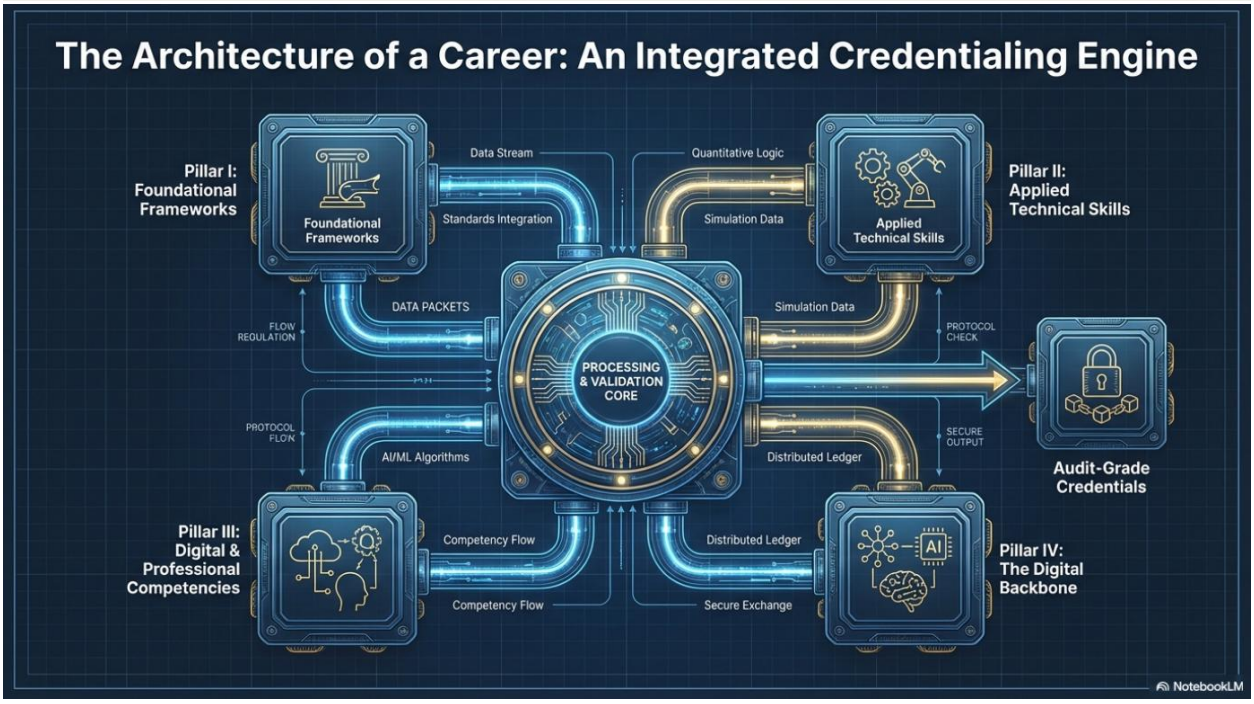

POLICY, ECONOMICS & FUTURE IMPACT
ECONOMIC MODELS
Incentives, Cost-Benefit Analysis (CBA), Net Present Value (NPV), Tariff structures.
ECOLOGICAL IMPACT
Risk registers, residual impact scoring, biodiversity safeguards.
FUTURE TRENDS
Technology watch, TRL mapping, Innovation roadmaps.
Source: Policy & Innovation Frameworks 2024
NotebookLM

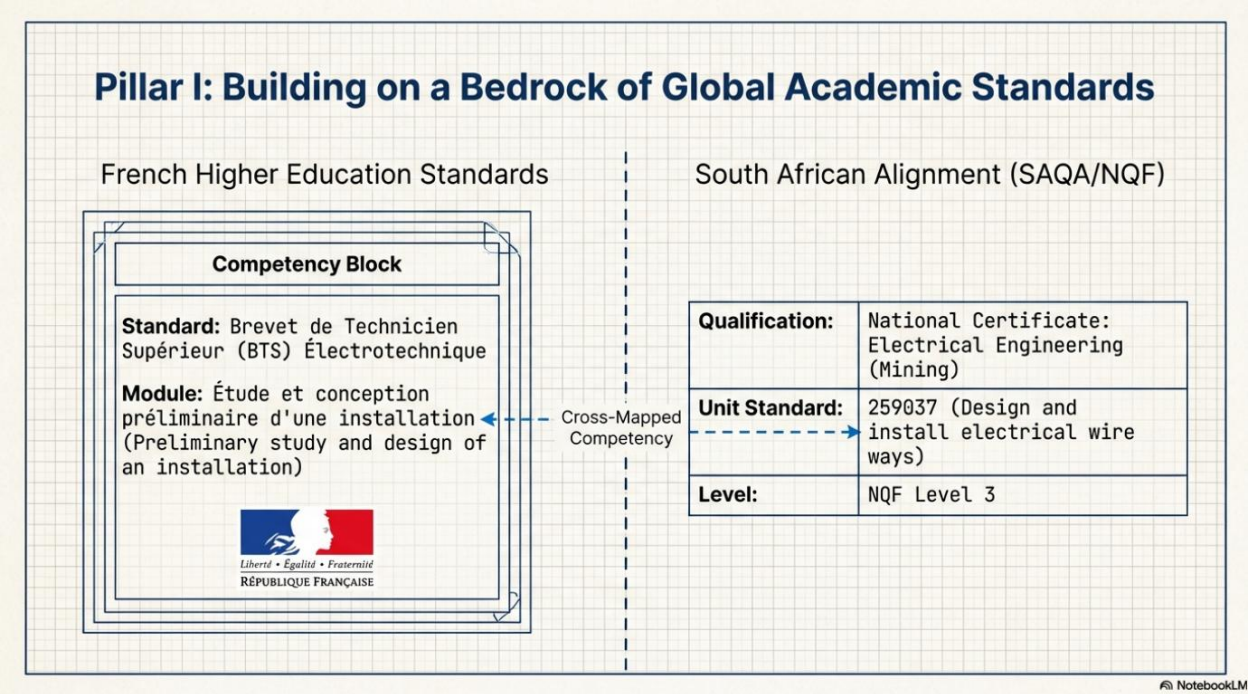
A CERTIFIED RECORD OF RESEARCH
Certified Record of Research Achievement
50 SOURCES
Regulatory Nexus: CCMA, PSiRA, SAPS
50 SOURCES
Crime System Architecture
50 SOURCES
Project and Principles
50 SOURCES
DOCUMENTED. SOURCED. AUDIT-READY.
NotebookLM

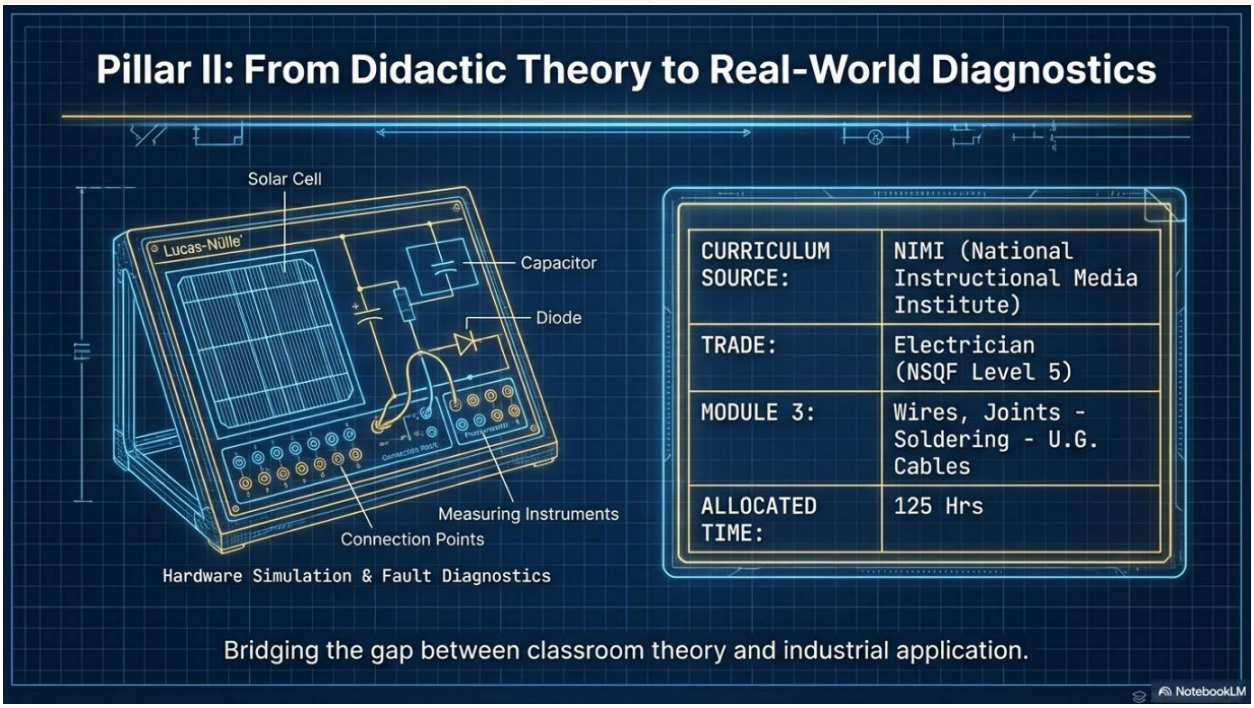

VERIFIED PROFESSIONAL PORTFOLIO
Tshingombe Tshitadi Fiston
Status: Active Research and Portfolio Development.
VERIFICATION CHANNELS
• Google Learning & Classroom
• KLM Learning Records
• Blogger & YouTube Portfolios
NotebookLM

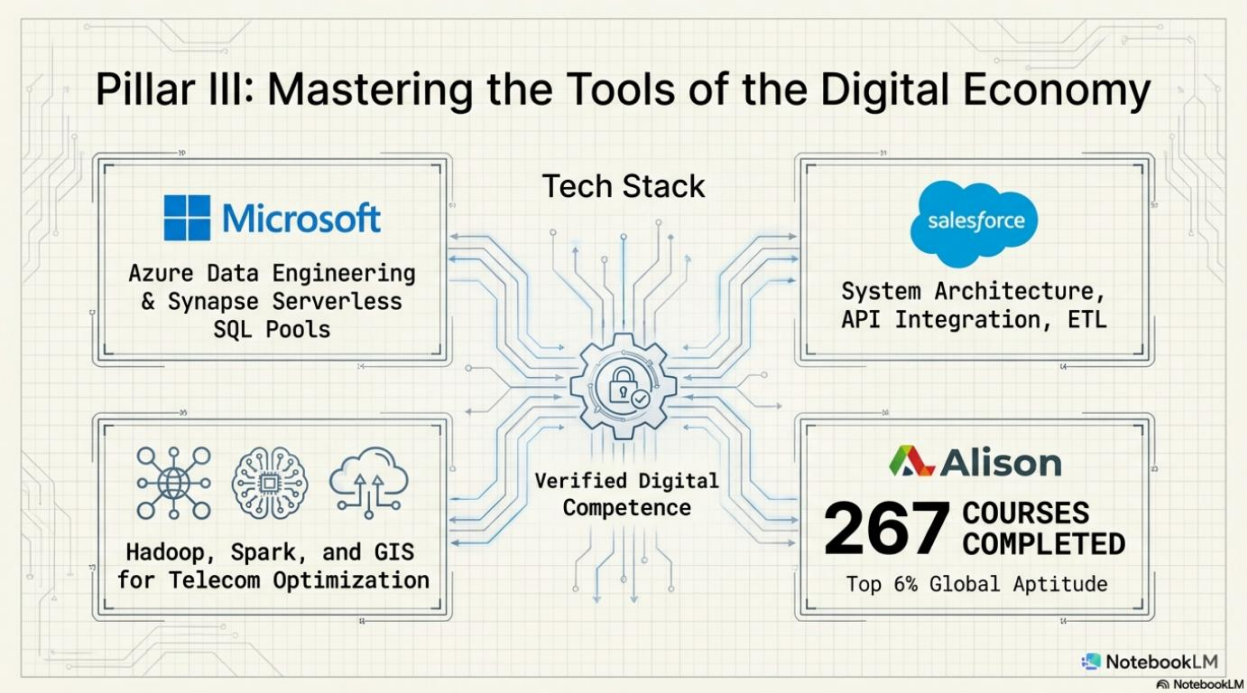
The Audit-Grade Career Engine
A Blueprint for Verifiable Competence, Industrial Innovation, and TVET Reform.
Architected by Tshingombe Tshitadi Fiston
A modular framework that synthesizes formal education, vocational training, and workplace experience into a single, auditable data stream.
NotebookLM

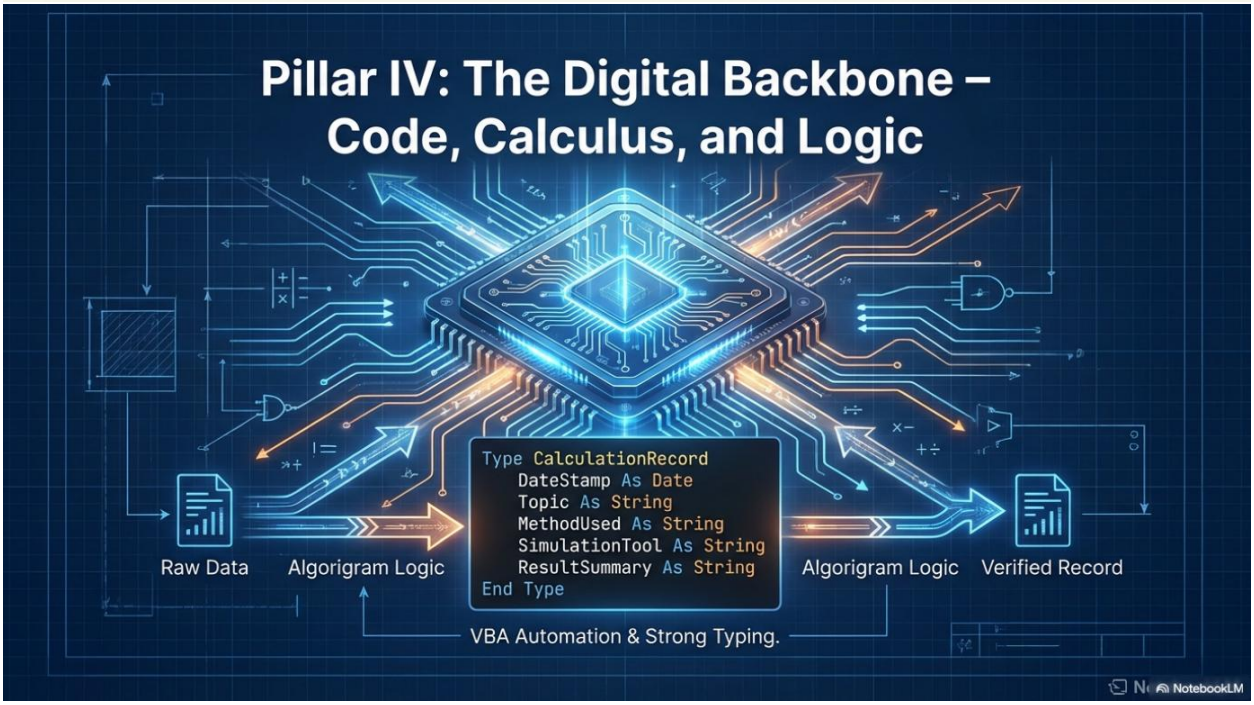

The Labyrinth: Navigating a Fractured TVET Landscape
4. The Unaccredited Void: Inconsistent verification leading to irregularities.
3. Broken Feedback Loop: Static qualifications ignoring employer signals.
2. The Siloed Curriculum: Disconnect between trade theory and industry utility.
1. Administrative Deadlock: Extreme processing backlogs (DHET/SAQA).
"When the system is flawed, expertise is forged in navigating its complexities."
NotebookLM


The Architecture of a Career: An Integrated Credentialing Engine
Pillar I: Foundational Frameworks
Foundational Frameworks
Data Stream
Standards Integration
Quantitative Logic
Simulation Data
Applied Technical Skills
Pillar II: Applied Technical Skills
DATA PACKETS
FLOW REGULATION
PROCESSING & VALIDATION CORE
Simulation Data
PROTOCOL CHECK
PROTOCOL FLOW
AI/ML Algorithms
Distributed Ledger
SECURE OUTPUT
Audit-Grade Credentials
Pillar III: Digital & Professional Competencies
Competency Flow
Competency Flow
Distributed Ledger
Secure Exchange
AI
Pillar IV: The Digital Backbone
NotebookLM


Pillar I: Building on a Bedrock of Global Academic Standards
French Higher Education Standards
South African Alignment (SAQA/NQF)
Competency Block
Standard: Brevet de Technicien Supérieur (BTS) Électrotechnique
Module: Étude et conception préliminaire d'une installation (Preliminary study and design of an installation)
Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE
Cross-Mapped Competency
Qualification: National Certificate: Electrical Engineering (Mining)
Unit Standard: 259037 (Design and install electrical wire ways)
Level: NQF Level 3
NotebookLM


Pillar II: From Didactic Theory to Real-World Diagnostics
Solar Cell
Capacitor
Diode
Measuring Instruments
Connection Points
Hardware Simulation & Fault Diagnostics
CURRICULUM SOURCE: NIMI (National Instructional Media Institute)
TRADE: Electrician (NSQF Level 5)
MODULE 3: Wires, Joints - Soldering - U.G. Cables
ALLOCATED TIME: 125 Hrs
Bridging the gap between classroom theory and industrial application.
NotebookLM


Pillar III: Mastering the Tools of the Digital Economy
Tech Stack
Microsoft
Azure Data Engineering & Synapse Serverless SQL Pools
salesforce
System Architecture, API Integration, ETL
Hadoop, Spark, and GIS for Telecom Optimization
Verified Digital Competence
Alison
267 COURSES COMPLETED
Top 6% Global Aptitude
NotebookLM


Pillar IV: The Digital Backbone – Code, Calculus, and Logic
Type CalculationRecord
DateStamp As Date
Topic As String
MethodUsed As String
SimulationTool As String
ResultSummary As String
End Type
Raw Data
Algorigram Logic
Algorigram Logic
Verified Record
VBA Automation & Strong Typing.
NotebookLM

The Engine's Logic: Quantifying Performance with Calculus

A Quantitative Approach

Total Engagement:

$$E_{total} = \int_0^T E(t)\,dt$$

Integrating interaction rate over campaign duration.

Energy Harvested:

$$E = \int_0^T \frac{1}{2}\rho A v^3 \eta\,dt$$

Calculating renewable output based on physics.

Project Velocity:

$$\frac{dN}{dt}$$

Derivative of task completion over time.

Code Implementation

```
Function WindEnergyHarvest(rho As Double, A As Double, v As Double, eta As Double, duration As Double) As Double
    WindEnergyHarvest = 0.5 * rho * A * (v ^ 3) * eta * duration
End Function
```

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From Data Points to Audit-Ready Credentials

Data Aggregation
Compiling metrics & curriculum blocks

Credential Generation
Formatting for SAQA, AIU, ASIC

Secure Issuance
BlockMark Technologies: NFT Digital Twin & Hash Stamping

Outcome: Legacy-Ready Export Format (Eliminates Portfolio Damage)

NotebookLM

Technical Paper 16:9

The Tshitadi Dossier: A Paradox of Prolific Work vs. Systemic Hurdles

While the system stalled on “eligibility,” the innovation engine never stopped running.

NotebookLM

Industrial Blueprint meets High-End Editorial

Evidence of Innovation: What the System Missed

VERIFIED

Alison

267+ Completed Courses (Top 6% Aptitude).

VERIFIED

GitHub

Repositories for Smart Grid Optimization & AI Control Systems.

VERIFIED

- Optimization of battery energy storage for grid stabilization
- AI-Based Predictive Maintenance in Industrial Systems
- High-efficiency resonant inductive coupling for EVs

The Career Engine captured the value that the traditional bureaucracy discarded.

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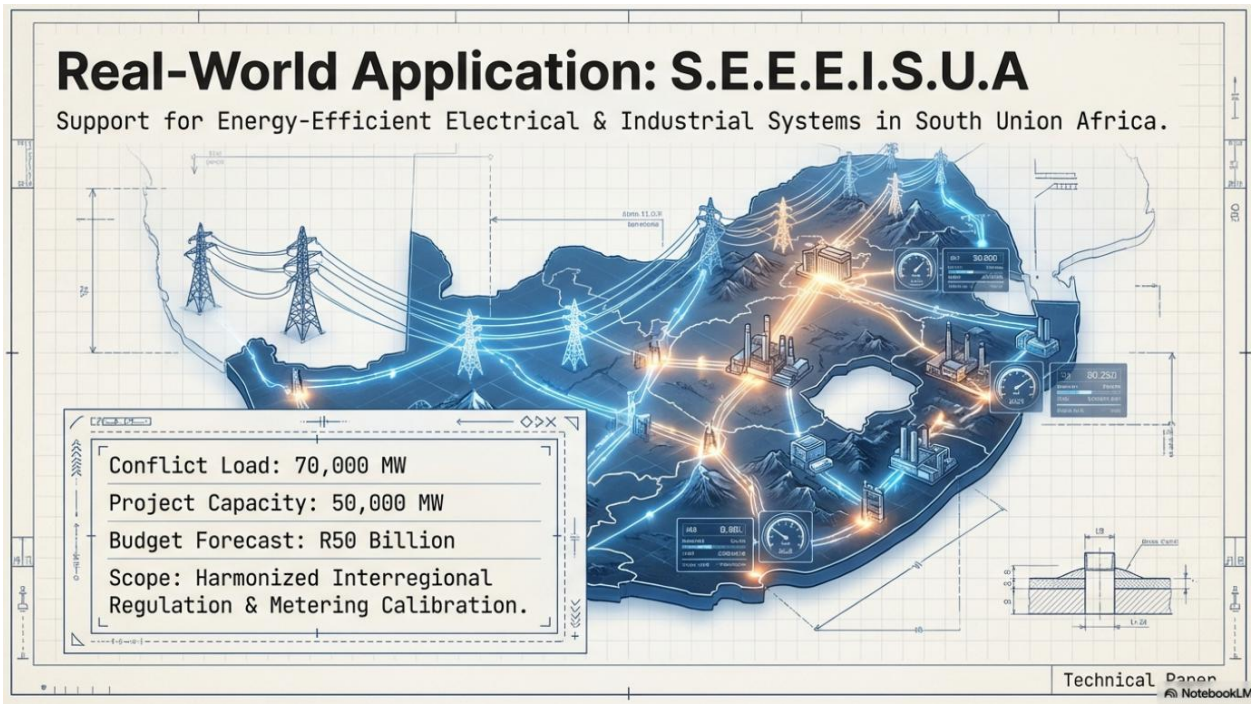
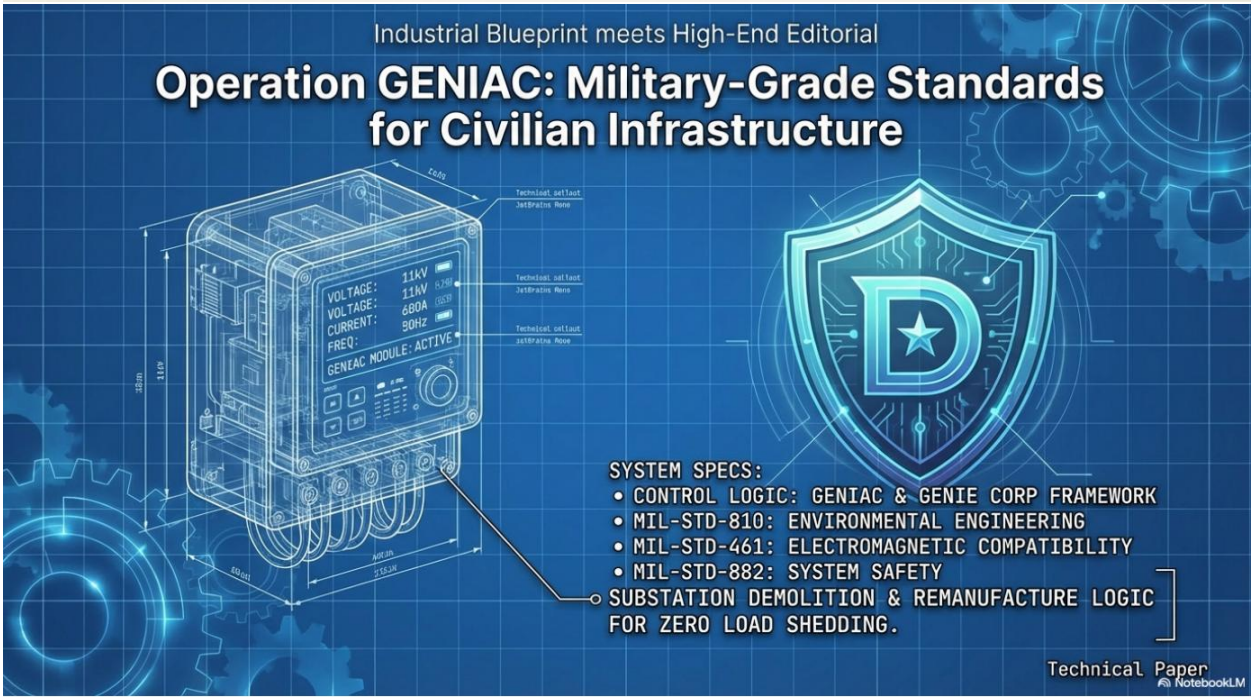
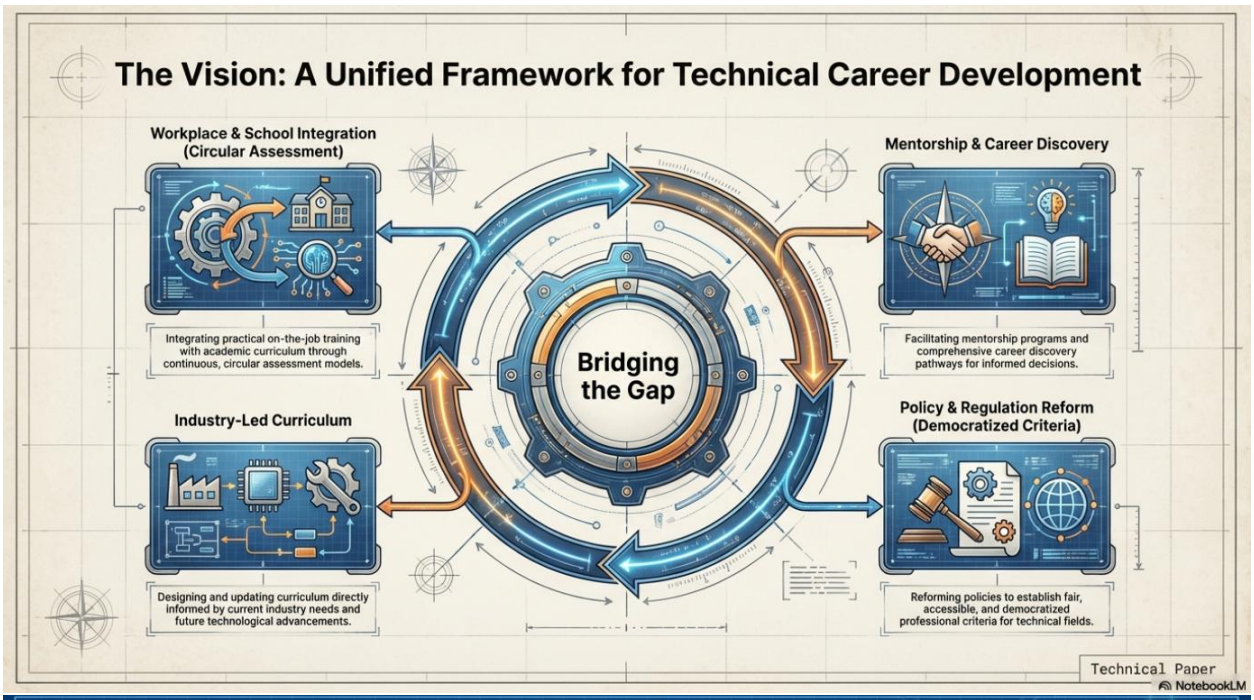

Real-World Application: S.E.E.E.I.S.U.A
Support for Energy-Efficient Electrical & Industrial Systems in South Union Africa.
Conflict Load: 70,000 MW
Project Capacity: 50,000 MW
Budget Forecast: R50 Billion
Scope: Harmonized Interregional Regulation & Metering Calibration.
Technical Paper
NotebookLM


Industrial Blueprint meets High-End Editorial
Operation GENIAC: Military-Grade Standards for Civilian Infrastructure
VOLTAGE: 11kV
VOLTAGE: 11kV
CURRENT: 680A
FREQ: 90Hz
GENIAC MODULE: ACTIVE
SYSTEM SPECS:
• CONTROL LOGIC: GENIAC & GENIE CORP FRAMEWORK
• MIL-STD-810: ENVIRONMENTAL ENGINEERING
• MIL-STD-461: ELECTROMAGNETIC COMPATIBILITY
• MIL-STD-882: SYSTEM SAFETY
SUBSTATION DEMOLITION & REMANUFACTURE LOGIC FOR ZERO LOAD SHEDDING.
Technical Paper
NotebookLM


The Vision: A Unified Framework for Technical Career Development
Workplace & School Integration (Circular Assessment)
Integrating practical on-the-job training with academic curriculum through continuous, circular assessment models.
Mentorship & Career Discovery
Facilitating mentorship programs and comprehensive career discovery pathways for informed decisions.
Bridging the Gap
Industry-Led Curriculum
Designing and updating curriculum directly informed by current industry needs and future technological advancements.
Policy & Regulation Reform (Democratized Criteria)
Reforming policies to establish fair, accessible, and democratized professional criteria for technical fields.
Technical Paper
NotebookLM

Engage the Expertise. Recognize the Innovation.
The technology exists to turn the "Labyrinth" into a "Launchpad." It is time to adopt the Audit-Grade Career Engine.
Tshingombe Tshitadi Fiston
National-grade Curriculum Architect & LMS Training Manager
archive.org/details/@rdferz
NotebookLM

The Audit-Grade Career Engine

A Blueprint for Verifiable Competence, Regulatory Reform, and Technical Sovereignty.

```
SYSTEM ARCHITECTURE: INTEGRATED CREDENTIALING FRAMEWORK
STATUS: AUDIT-READY // V.2025
KEY INSIGHT: A modular framework that synthesizes formal education, vocational training, and workplace experience into a single, auditable system.
```

NotebookLM

The Core Challenge: Navigating the Labyrinth

Administrative Deadlock

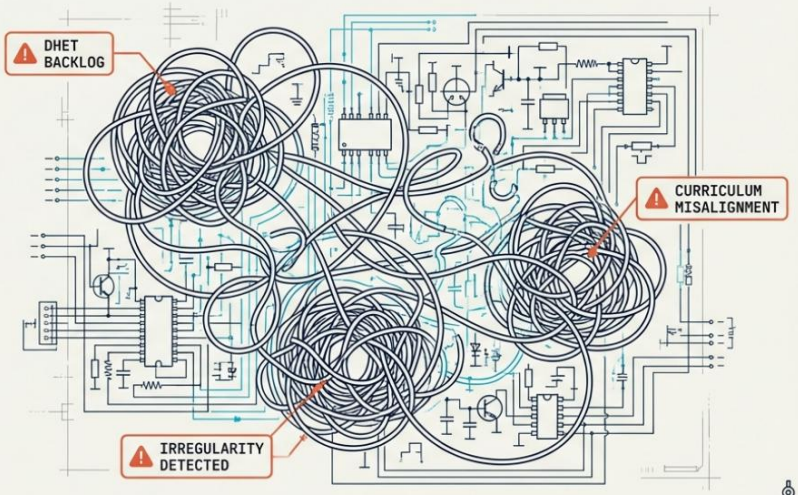
Extreme backlogs in processing results and diplomas (DHET/SAQA), creating 'over stay' students unable to graduate.

The Siloed Curriculum

A critical gap between 'trade theory' taught in colleges and the industrial reality of employers like Eskom and City Power.

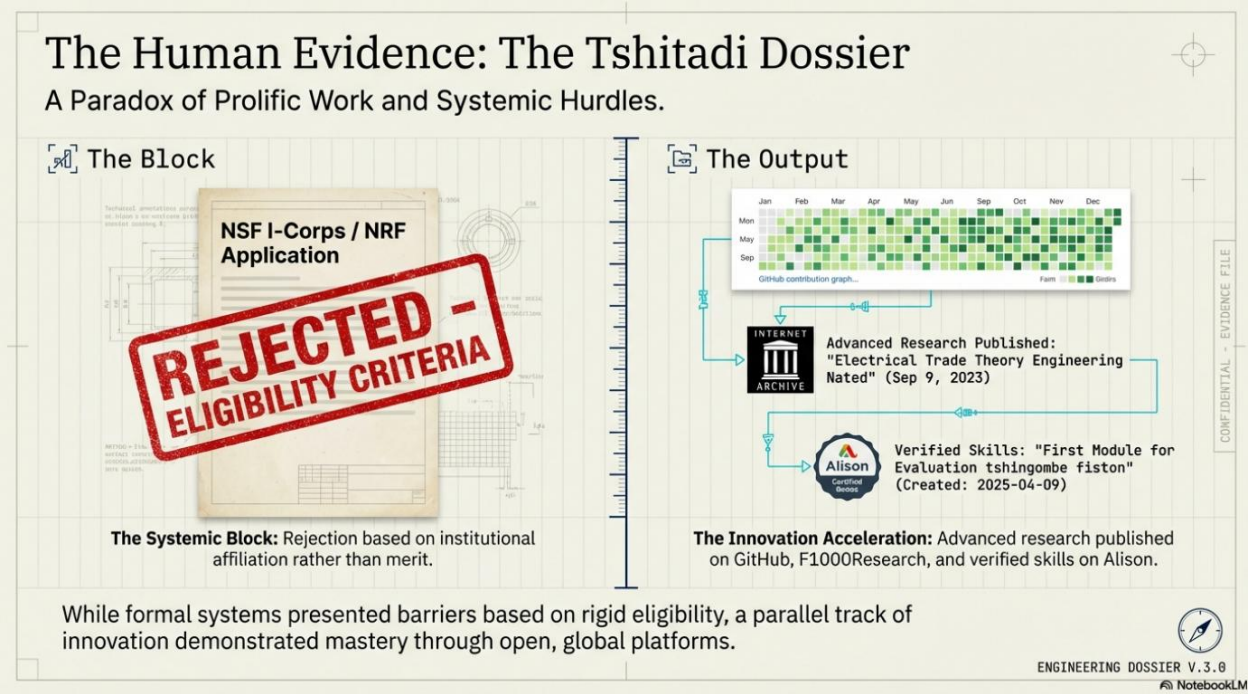
The Unaccredited Void

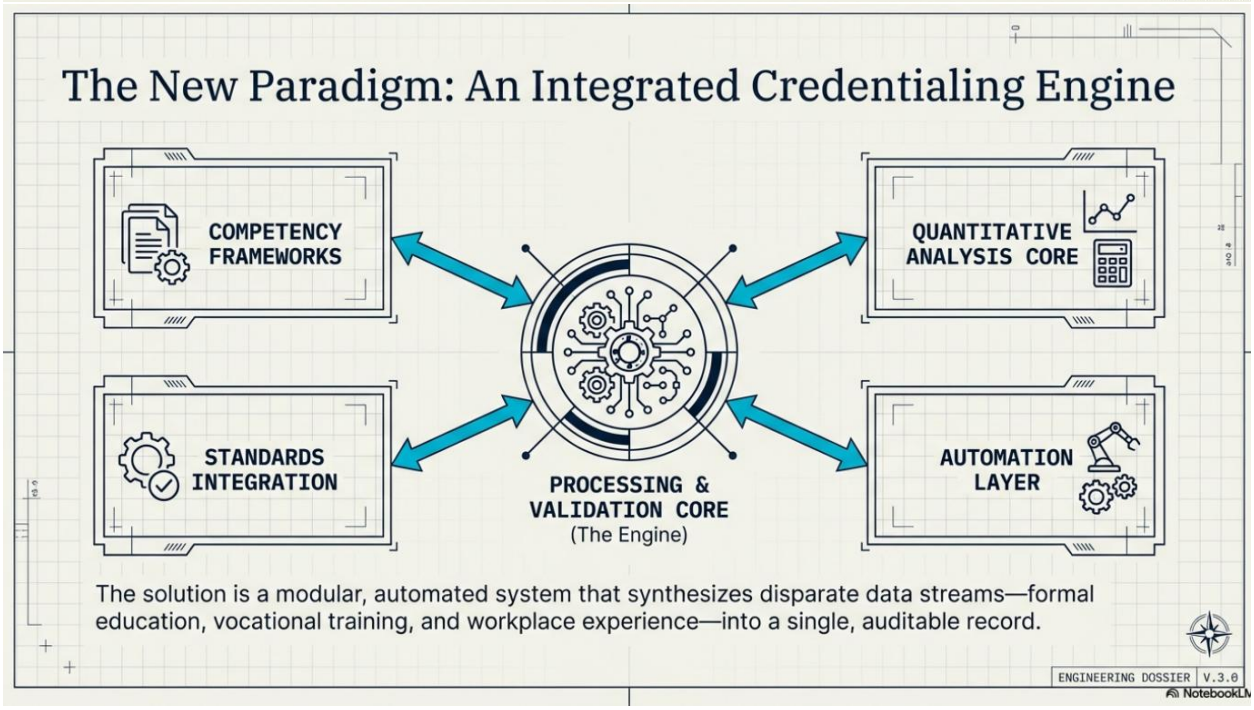
Inconsistent recognition of qualifications leads to "irregularities" and legal disputes.



ENGINEERING DOSSIER V.3.0

NotebookLM


The Human Evidence: The Tshitadi Dossier
A Paradox of Prolific Work and Systemic Hurdles.
The Block
NSF I-Corps / NRF Application
REJECTED - ELIGIBILITY CRITERIA
The Systemic Block: Rejection based on institutional affiliation rather than merit.
The Output
Jan Feb Mar Apr May Jun Sep Oct Nov Dec
Mon
May
Sep
GitHub contribution graph...
Less More
INTERNET ARCHIVE
Advanced Research Published: "Electrical Trade Theory Engineering Nated" (Sep 9, 2023)
Alison Certified Badge
Verified Skills: "First Module for Evaluation tshingombe fiston" (Created: 2025-04-09)
The Innovation Acceleration: Advanced research published on GitHub, F1000Research, and verified skills on Alison.
While formal systems presented barriers based on rigid eligibility, a parallel track of innovation demonstrated mastery through open, global platforms.
CONFIDENTIAL - EVIDENCE FILE
ENGINEERING DOSSIER V.3.0
NotebookLM


The New Paradigm: An Integrated Credentialing Engine
COMPETENCY FRAMEWORKS
QUANTITATIVE ANALYSIS CORE
STANDARDS INTEGRATION
AUTOMATION LAYER
PROCESSING & VALIDATION CORE
(The Engine)
The solution is a modular, automated system that synthesizes disparate data streams—formal education, vocational training, and workplace experience—into a single, auditable record.
ENGINEERING DOSSIER V.3.0
NotebookLM

Pillar I: Foundational Frameworks

Building on a Bedrock of Global Academic Standards

France (BTS Alignment)

Brevet de Technicien Supérieur (BTS) Électrotechnique

Competency Block: Étude et conception préliminaire d'une installation (Preliminary study and design)

South Africa (SAQA NQF)

Qualification	Unit Standard ID	Title	Level
National Certificate: Electrical Engineering	259037	Design and install electrical wire ways	NQF Level 3

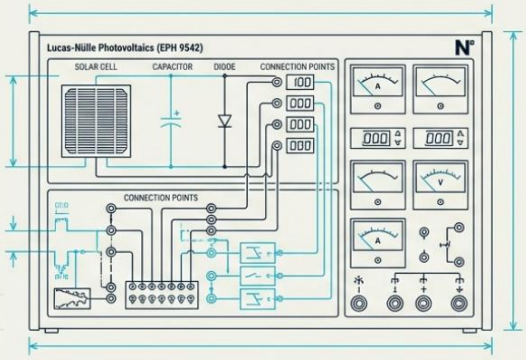
The engine is not a rogue system. It maps internal competencies directly to established national and international qualifications.

ENGINEERING DOSSIER V.3.0

NotebookLM

Pillar II: Applied Technical Skills

From Didactic Theory to Real-World Diagnostics.



Simulation Systems: Leveraging Lucas-Nülle UniTrain/InStrain systems for fault simulation in photovoltaics and automation.

Structured Vocational Training (NIMI Curriculum)

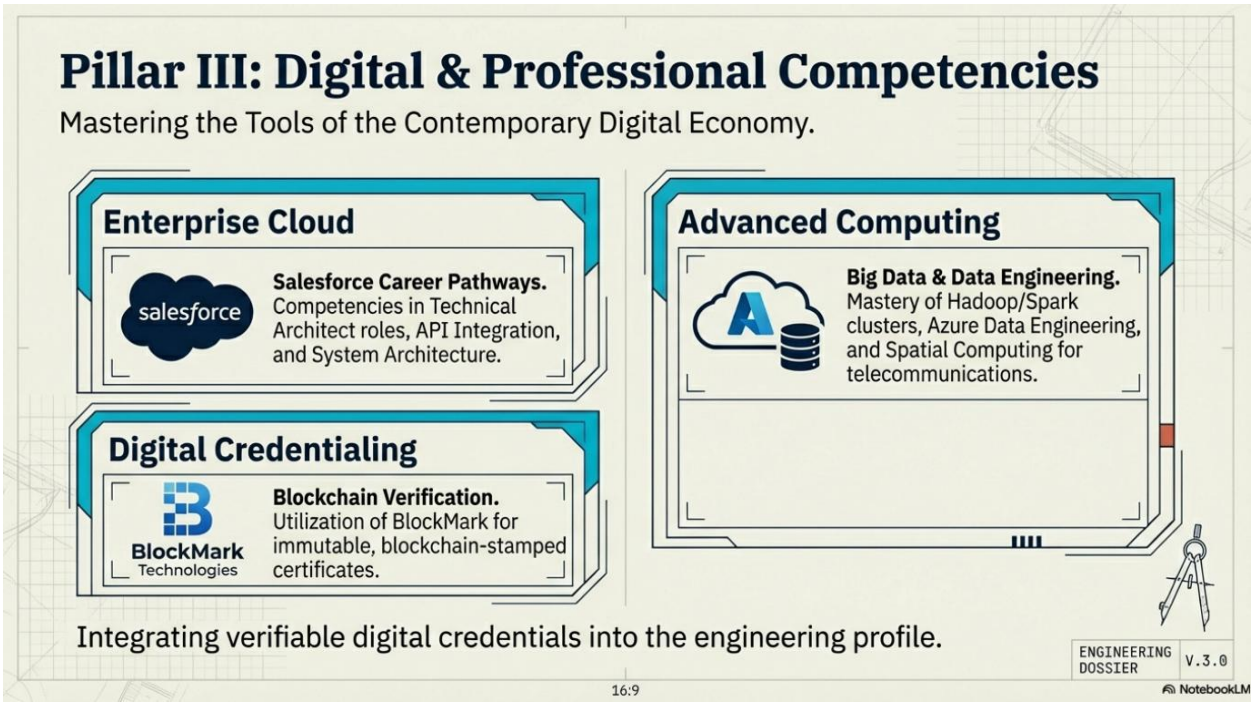
NIMI Curriculum: Electrician (NSQF Level 5)	
Module:	Electrician (NSQF Level 5)
Focus:	Wires, Joints - Soldering - U.G. Cables
Allocated Time:	125 Hrs

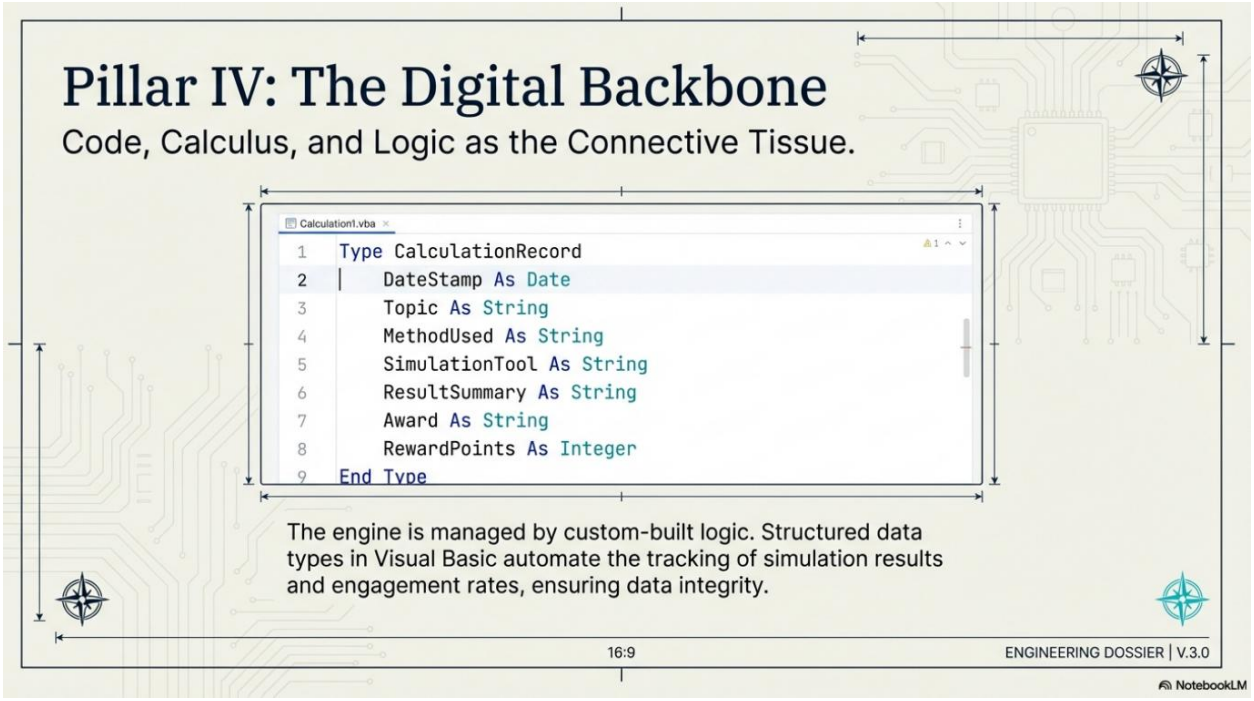
Bridging the gap between textbook theory and industrial application through fault simulation and standardized practical exercises.

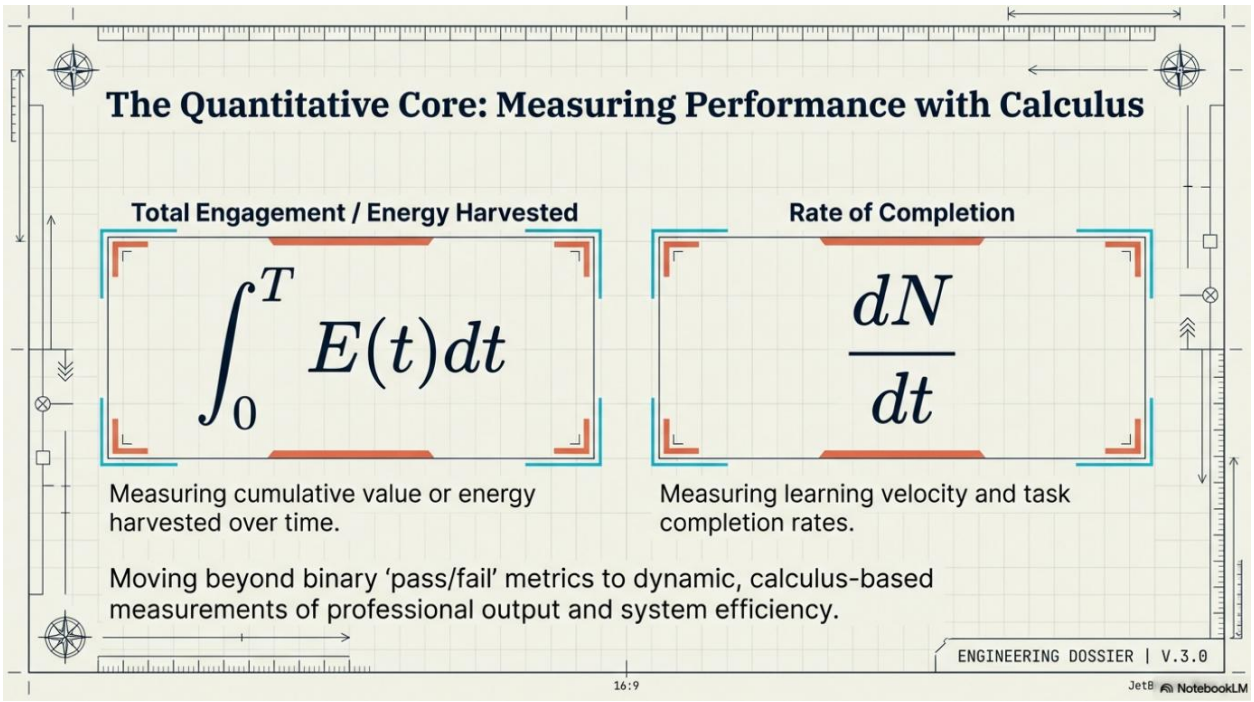
16:9

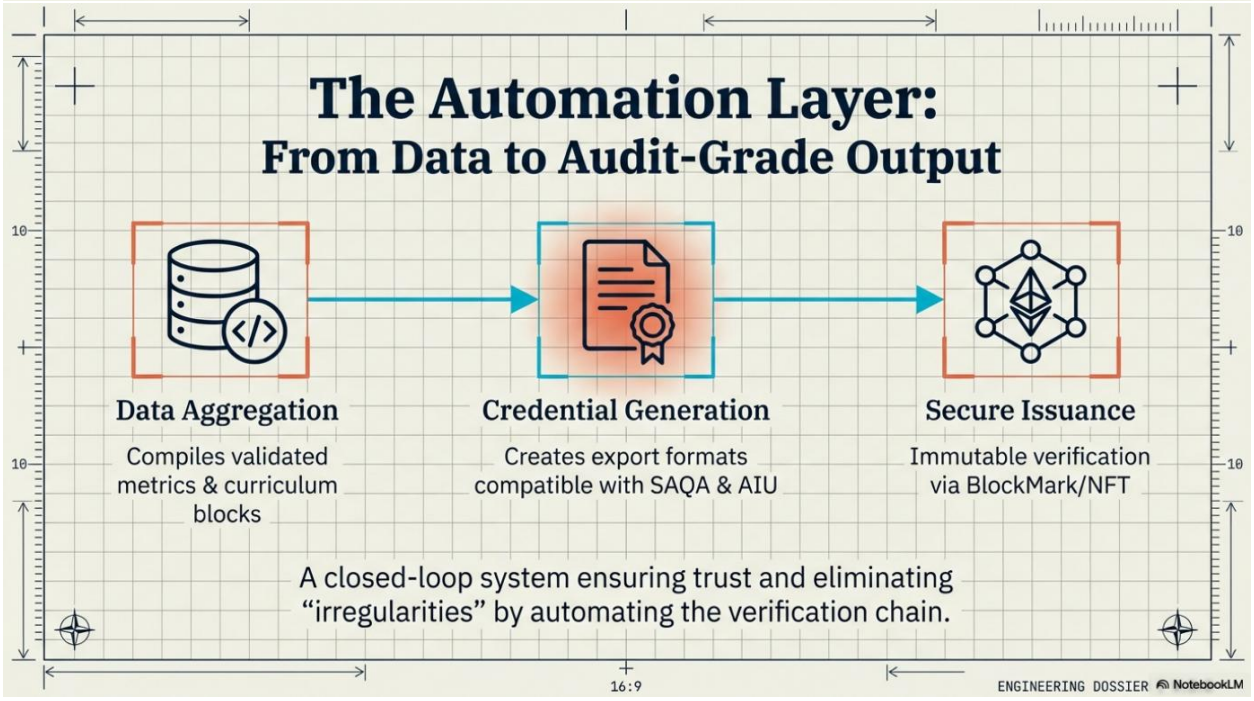
ENGINEERING DOSS

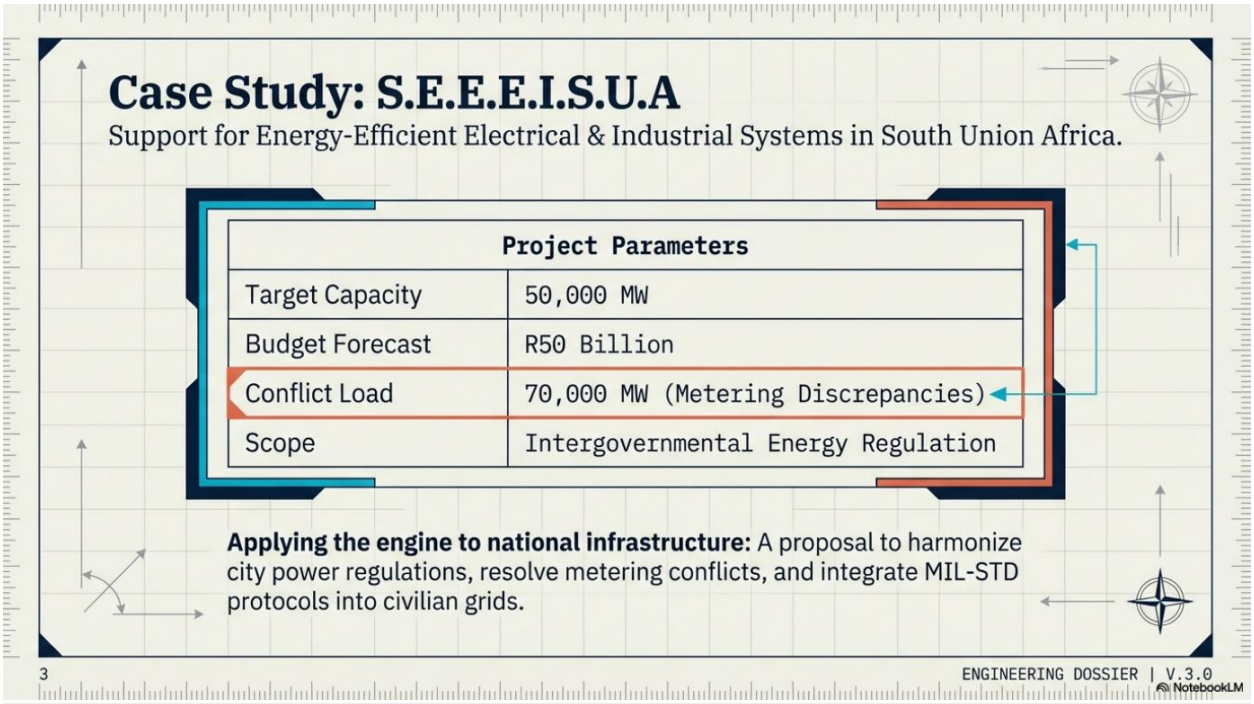
NotebookLM

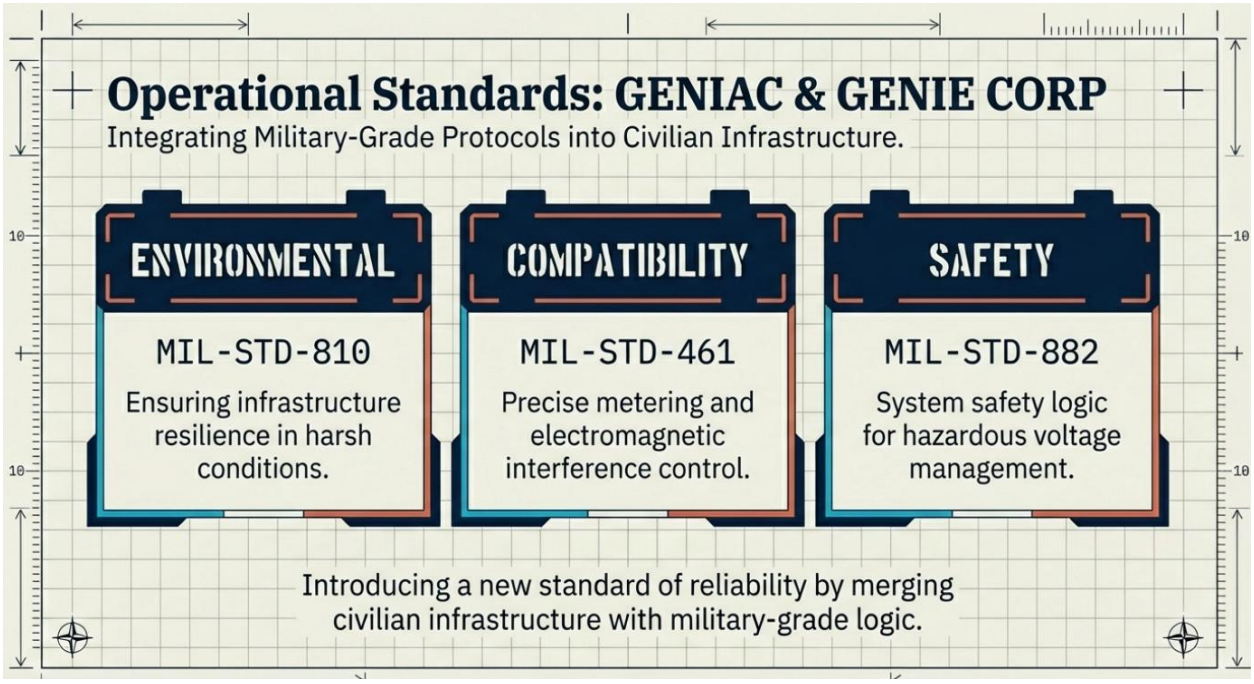

Pillar III: Digital & Professional Competencies
Mastering the Tools of the Contemporary Digital Economy.
Enterprise Cloud
salesforce
Salesforce Career Pathways. Competencies in Technical Architect roles, API Integration, and System Architecture.
Digital Credentialing
BlockMark Technologies
Blockchain Verification. Utilization of BlockMark for immutable, blockchain-stamped certificates.
Advanced Computing
Big Data & Data Engineering. Mastery of Hadoop/Spark clusters, Azure Data Engineering, and Spatial Computing for telecommunications.
Integrating verifiable digital credentials into the engineering profile.
ENGINEERING DOSSIER
V.3.0
16:9
NotebookLM

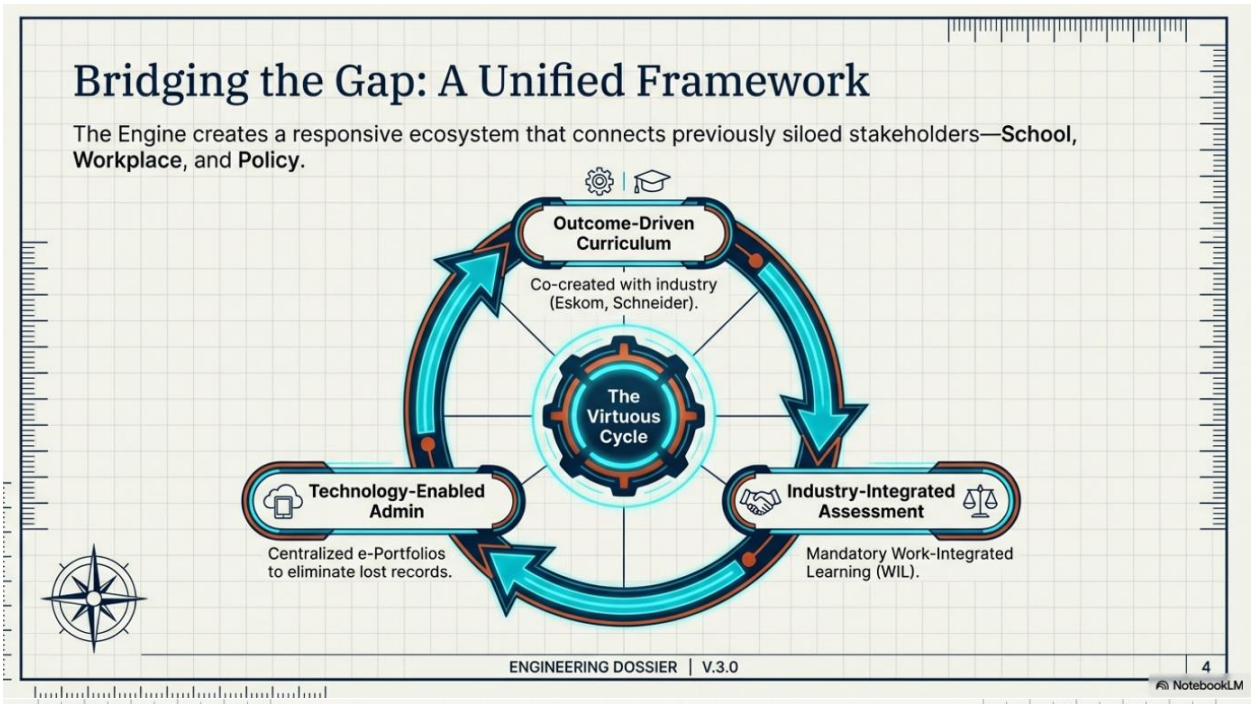

Pillar IV: The Digital Backbone
Code, Calculus, and Logic as the Connective Tissue.
Calculation1.vba
Type CalculationRecord
DateStamp As Date
Topic As String
MethodUsed As String
SimulationTool As String
ResultSummary As String
Award As String
RewardPoints As Integer
End Type
The engine is managed by custom-built logic. Structured data types in Visual Basic automate the tracking of simulation results and engagement rates, ensuring data integrity.
16:9
ENGINEERING DOSSIER | V.3.0
NotebookLM

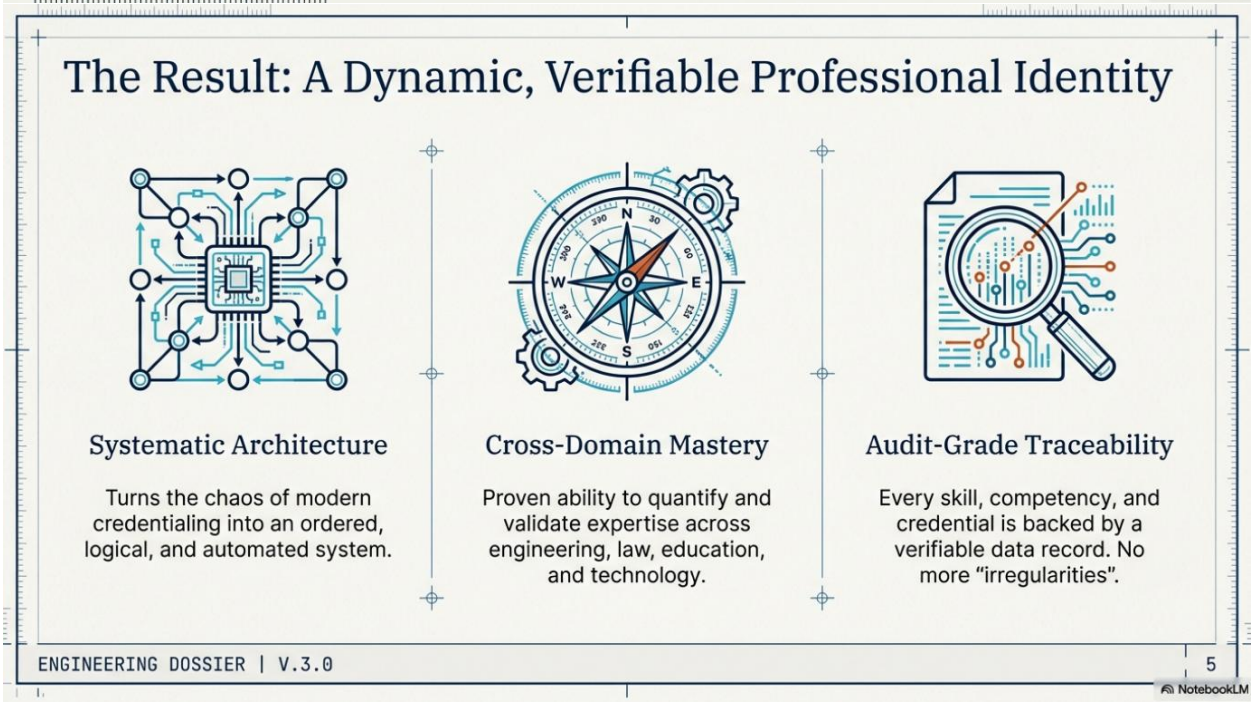

The Quantitative Core: Measuring Performance with Calculus
Total Engagement / Energy Harvested
$\int_0^T E(t)dt$
Rate of Completion
$\frac{dN}{dt}$
Measuring cumulative value or energy harvested over time.
Measuring learning velocity and task completion rates.
Moving beyond binary 'pass/fail' metrics to dynamic, calculus-based measurements of professional output and system efficiency.
ENGINEERING DOSSIER | V.3.0
16:9
NotebookLM

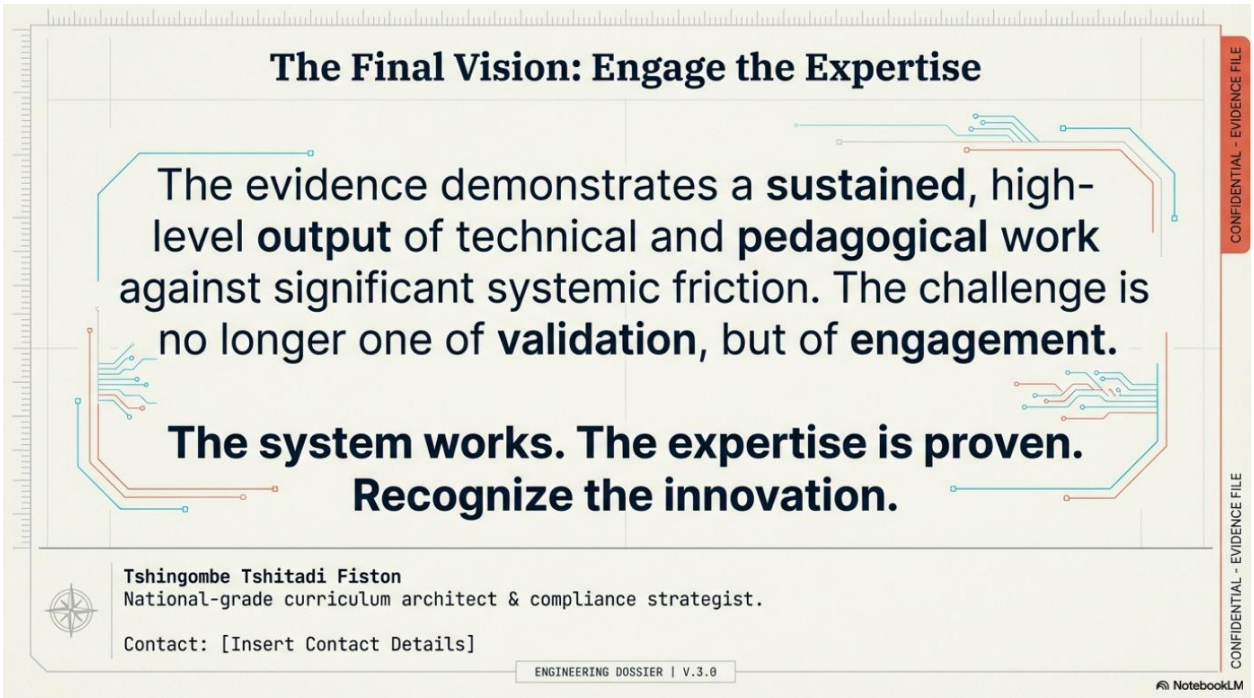

The Automation Layer:
From Data to Audit-Grade Output
Data Aggregation
Compiles validated metrics & curriculum blocks
Credential Generation
Creates export formats compatible with SAQA & AIU
Secure Issuance
Immutable verification via BlockMark/NFT
A closed-loop system ensuring trust and eliminating "irregularities" by automating the verification chain.
16:9
ENGINEERING DOSSIER
NotebookLM


Case Study: S.E.E.E.I.S.U.A
Support for Energy-Efficient Electrical & Industrial Systems in South Union Africa.
Project Parameters
Target Capacity
50,000 MW
Budget Forecast
R50 Billion
Conflict Load
70,000 MW (Metering Discrepancies)
Scope
Intergovernmental Energy Regulation
Applying the engine to national infrastructure: A proposal to harmonize city power regulations, resolve metering conflicts, and integrate MIL-STD protocols into civilian grids.
3
ENGINEERING DOSSIER | V.3.0
NotebookLM


Operational Standards: GENIAC & GENIE CORP
Integrating Military-Grade Protocols into Civilian Infrastructure.
ENVIRONMENTAL
MIL-STD-810
Ensuring infrastructure resilience in harsh conditions.
COMPATIBILITY
MIL-STD-461
Precise metering and electromagnetic interference control.
SAFETY
MIL-STD-882
System safety logic for hazardous voltage management.
Introducing a new standard of reliability by merging civilian infrastructure with military-grade logic.


Bridging the Gap: A Unified Framework
The Engine creates a responsive ecosystem that connects previously siloed stakeholders—School, Workplace, and Policy.
Outcome-Driven Curriculum
Co-created with industry (Eskom, Schneider).
The Virtuous Cycle
Technology-Enabled Admin
Centralized e-Portfolios to eliminate lost records.
Industry-Integrated Assessment
Mandatory Work-Integrated Learning (WIL).
ENGINEERING DOSSIER | V.3.0
4
NotebookLM


The Result: A Dynamic, Verifiable Professional Identity
Systematic Architecture
Turns the chaos of modern credentialing into an ordered, logical, and automated system.
Cross-Domain Mastery
Proven ability to quantify and validate expertise across engineering, law, education, and technology.
Audit-Grade Traceability
Every skill, competency, and credential is backed by a verifiable data record. No more “irregularities”.
ENGINEERING DOSSIER | V.3.0
5
NotebookLM


The Final Vision: Engage the Expertise
The evidence demonstrates a sustained, high-level output of technical and pedagogical work against significant systemic friction. The challenge is no longer one of validation, but of engagement.
The system works. The expertise is proven. Recognize the innovation.
Tshingombe Tshitadi Fiston
National-grade curriculum architect & compliance strategist.
Contact: [Insert Contact Details]
ENGINEERING DOSSIER | V.3.0
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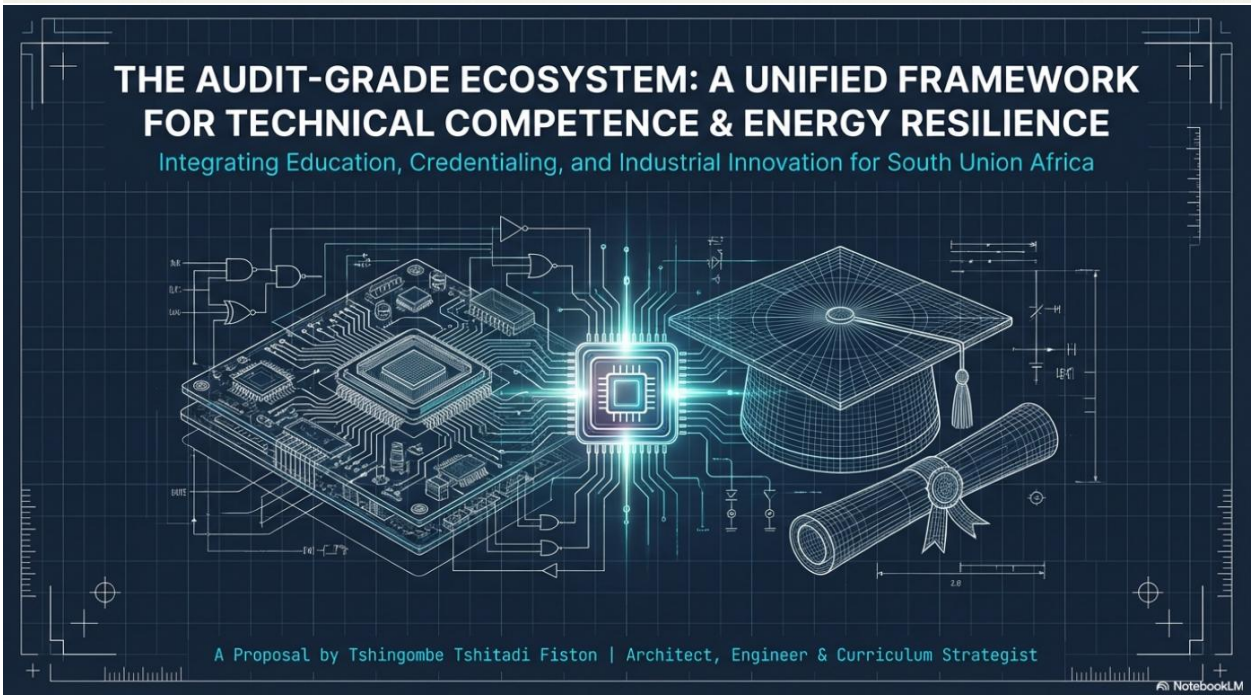
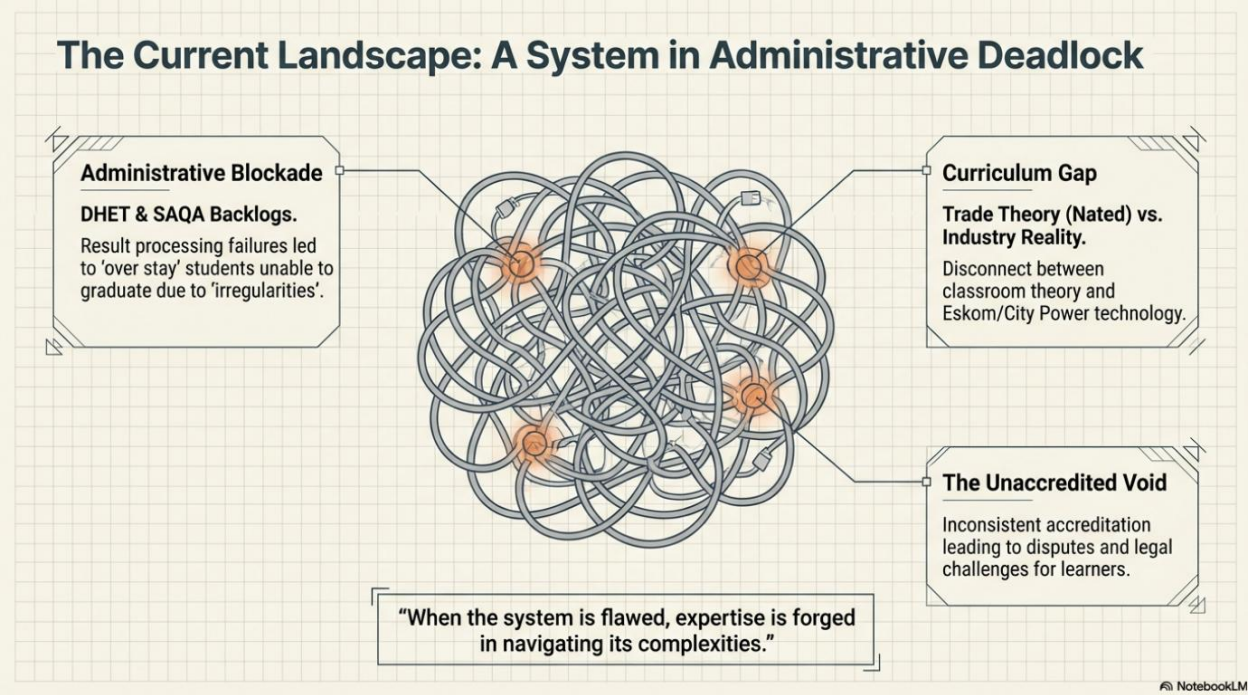
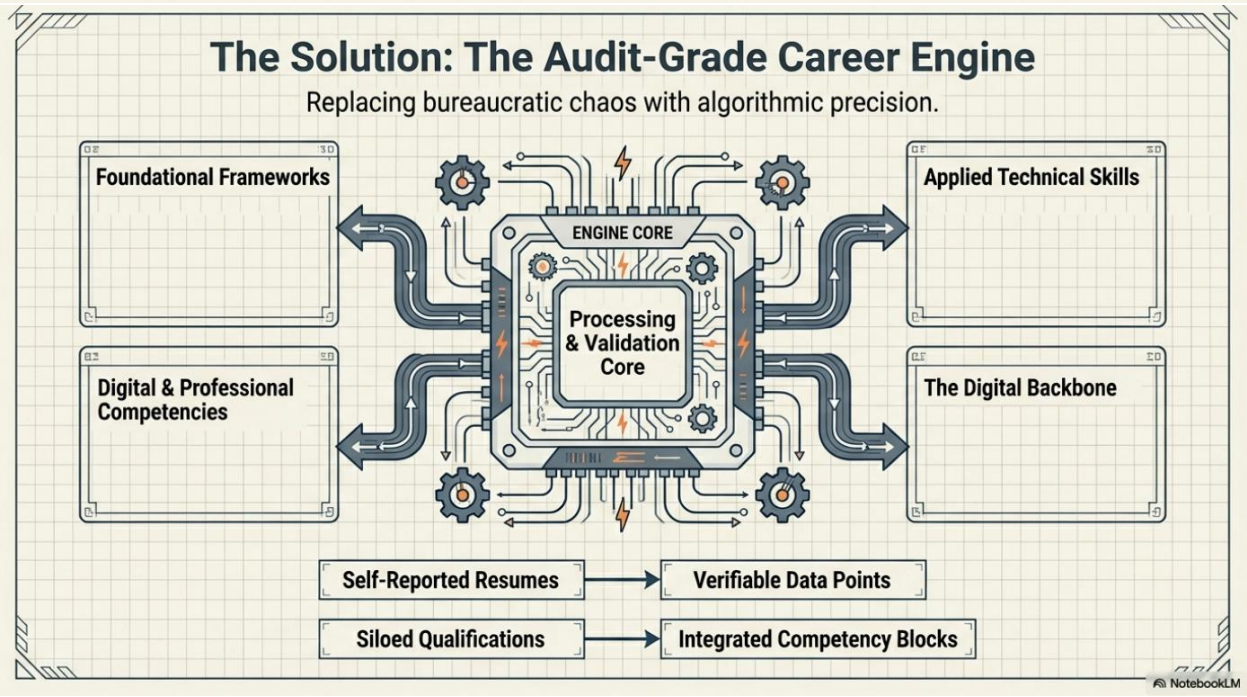

THE AUDIT-GRADE ECOSYSTEM: A UNIFIED FRAMEWORK FOR TECHNICAL COMPETENCE & ENERGY RESILIENCE
Integrating Education, Credentialing, and Industrial Innovation for South Union Africa
A Proposal by Tshingombe Tshitadi Fiston | Architect, Engineer & Curriculum Strategist
NotebookLM


The Current Landscape: A System in Administrative Deadlock
Administrative Blockade
DHET & SAQA Backlogs.
Result processing failures led to 'over stay' students unable to graduate due to 'irregularities'.
Curriculum Gap
Trade Theory (Nated) vs. Industry Reality.
Disconnect between classroom theory and Eskom/City Power technology.
The Unaccredited Void
Inconsistent accreditation leading to disputes and legal challenges for learners.
"When the system is flawed, expertise is forged in navigating its complexities."
NotebookLM


The Solution: The Audit-Grade Career Engine
Replacing bureaucratic chaos with algorithmic precision.
Foundational Frameworks
Applied Technical Skills
ENGINE CORE
Processing & Validation Core
Digital & Professional Competencies
The Digital Backbone
Self-Reported Resumes
Verifiable Data Points
Siloed Qualifications
Integrated Competency Blocks
NotebookLM

Pillars of Competence: Global Standards & Applied Skills

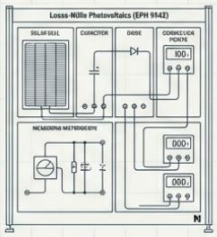
1. Foundational Frameworks

French Standard: Alignment with BTS Électrotechnique "blocs de compétences" (RNCP41007BC01).

South African Standard: SAQA NQF Level 3 Alignment.
Unit Standard 259037: Design and install electrical wire ways.

2. Applied Technical Skills

German Didactics: Lucas-Nülle UniTrain systems for fault simulation.



Indian Vocational Training: NIMI Curriculum (NSQF Level 5).
Focus: Practical workshop safety, wiring, and soldering.

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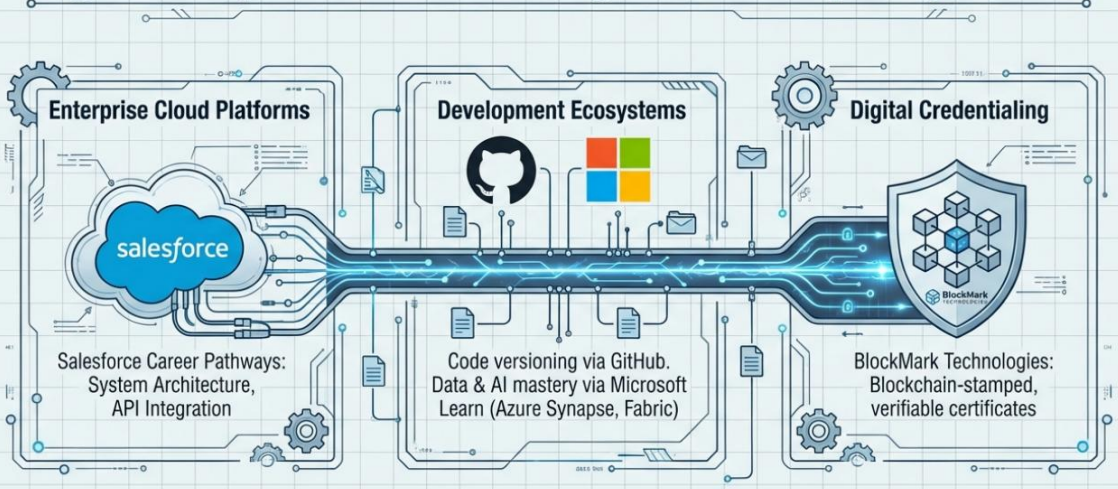
Digital Competencies: Mastering the Contemporary Toolset


Enterprise Cloud Platforms
Development Ecosystems
Digital Credentialing
salesforce
BlockMark
Salesforce Career Pathways: System Architecture, API Integration
Code versioning via GitHub. Data & AI mastery via Microsoft Learn (Azure Synapse, Fabric)
BlockMark Technologies: Blockchain-stamped, verifiable certificates

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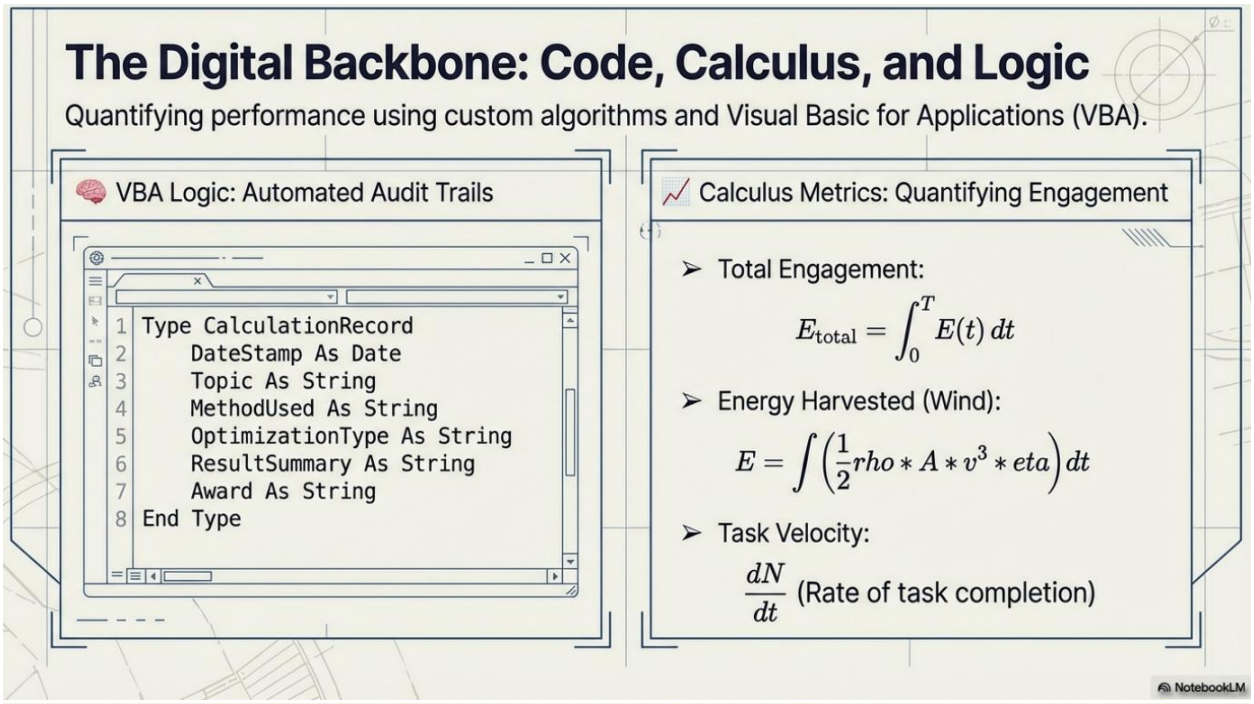
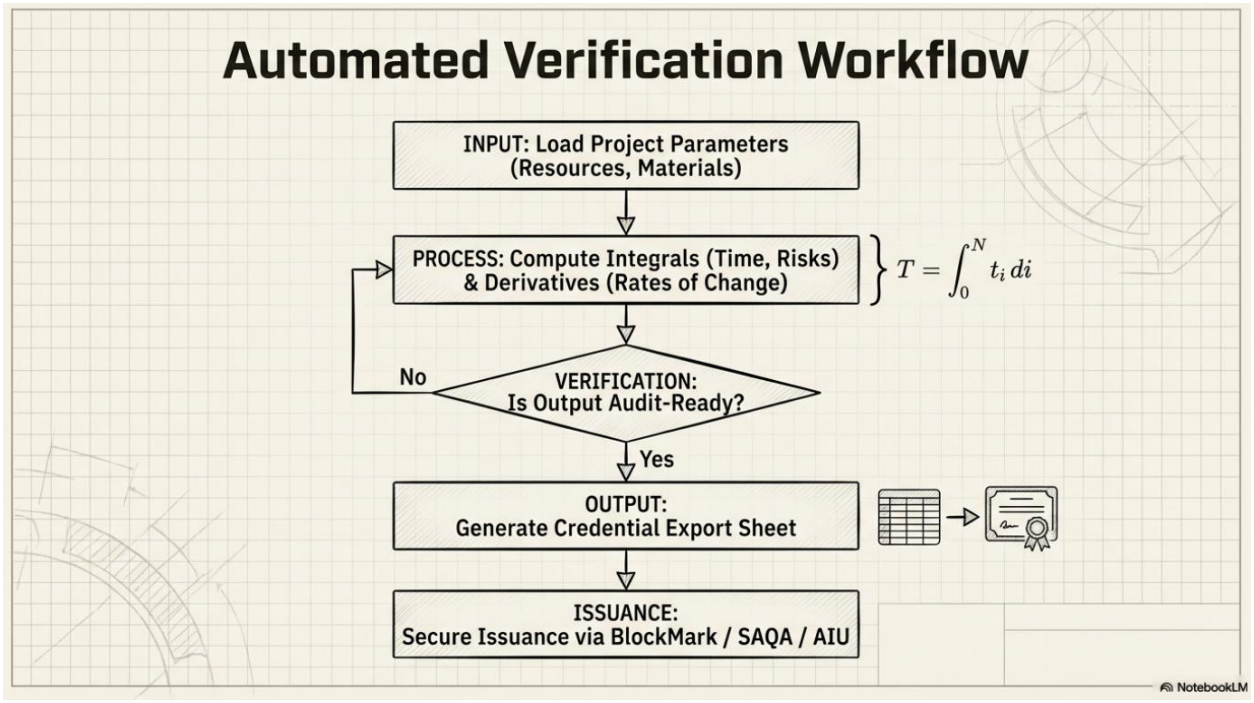
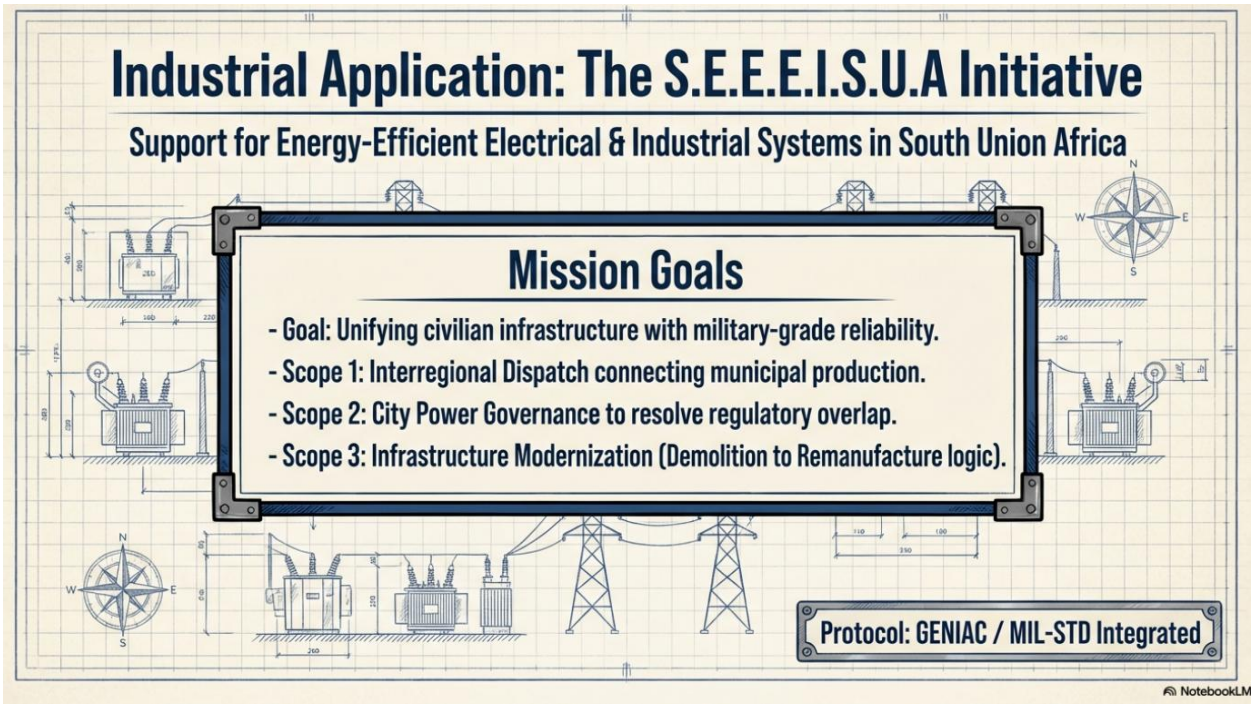
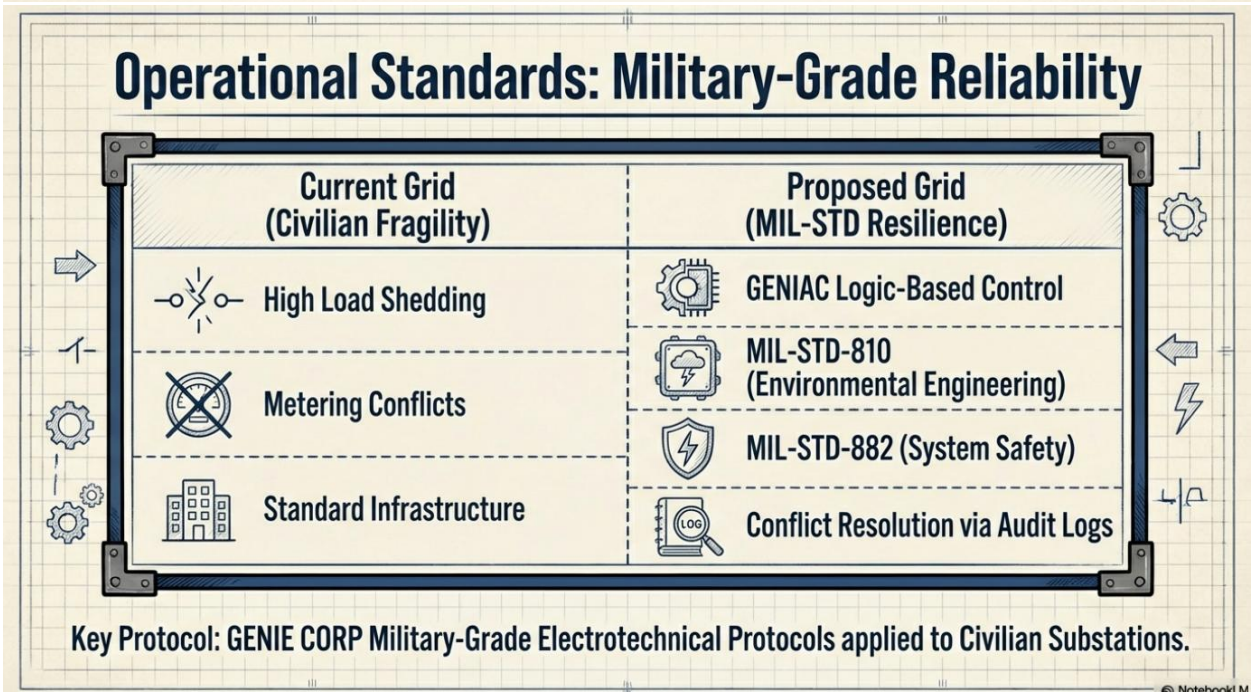
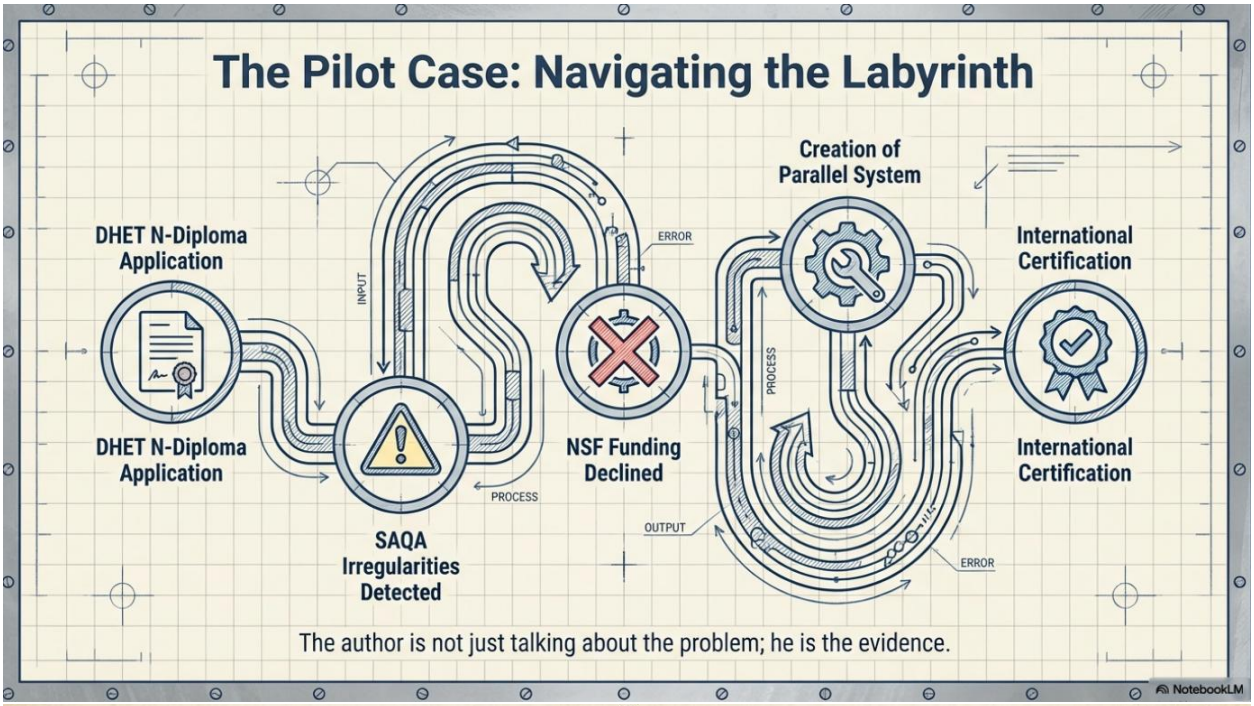

The Digital Backbone: Code, Calculus, and Logic
Quantifying performance using custom algorithms and Visual Basic for Applications (VBA).
VBA Logic: Automated Audit Trails
Type CalculationRecord
DateStamp As Date
Topic As String
MethodUsed As String
OptimizationType As String
ResultSummary As String
Award As String
End Type
Calculus Metrics: Quantifying Engagement
Total Engagement:
$E_{\text{total}} = \int_0^T E(t)\,dt$
Energy Harvested (Wind):
$E = \int \left(\frac{1}{2} rho * A * v^3 * eta\right) dt$
Task Velocity:
$\frac{dN}{dt}$ (Rate of task completion)
NotebookLM


Automated Verification Workflow
INPUT: Load Project Parameters (Resources, Materials)
PROCESS: Compute Integrals (Time, Risks) & Derivatives (Rates of Change)
$T = \int_0^N t_i\,di$
No
VERIFICATION: Is Output Audit-Ready?
Yes
OUTPUT: Generate Credential Export Sheet
ISSUANCE: Secure Issuance via BlockMark / SAQA / AIU
NotebookLM


Industrial Application: The S.E.E.E.I.S.U.A Initiative
Support for Energy-Efficient Electrical & Industrial Systems in South Union Africa
Mission Goals
- Goal: Unifying civilian infrastructure with military-grade reliability.
- Scope 1: Interregional Dispatch connecting municipal production.
- Scope 2: City Power Governance to resolve regulatory overlap.
- Scope 3: Infrastructure Modernization (Demolition to Remanufacture logic).
Protocol: GENIAC / MIL-STD Integrated
NotebookLM


Operational Standards: Military-Grade Reliability
Current Grid (Civilian Fragility)
Proposed Grid (MIL-STD Resilience)
High Load Shedding
GENIAC Logic-Based Control
Metering Conflicts
MIL-STD-810 (Environmental Engineering)
MIL-STD-882 (System Safety)
Standard Infrastructure
LOG
Conflict Resolution via Audit Logs
Key Protocol: GENIE CORP Military-Grade Electrotechnical Protocols applied to Civilian Substations.


The Pilot Case: Navigating the Labyrinth
DHET N-Diploma Application
DHET N-Diploma Application
INPUT
SAQA Irregularities Detected
PROCESS
ERROR
NSF Funding Declined
Creation of Parallel System
PROCESS
OUTPUT
ERROR
International Certification
International Certification
The author is not just talking about the problem; he is the evidence.
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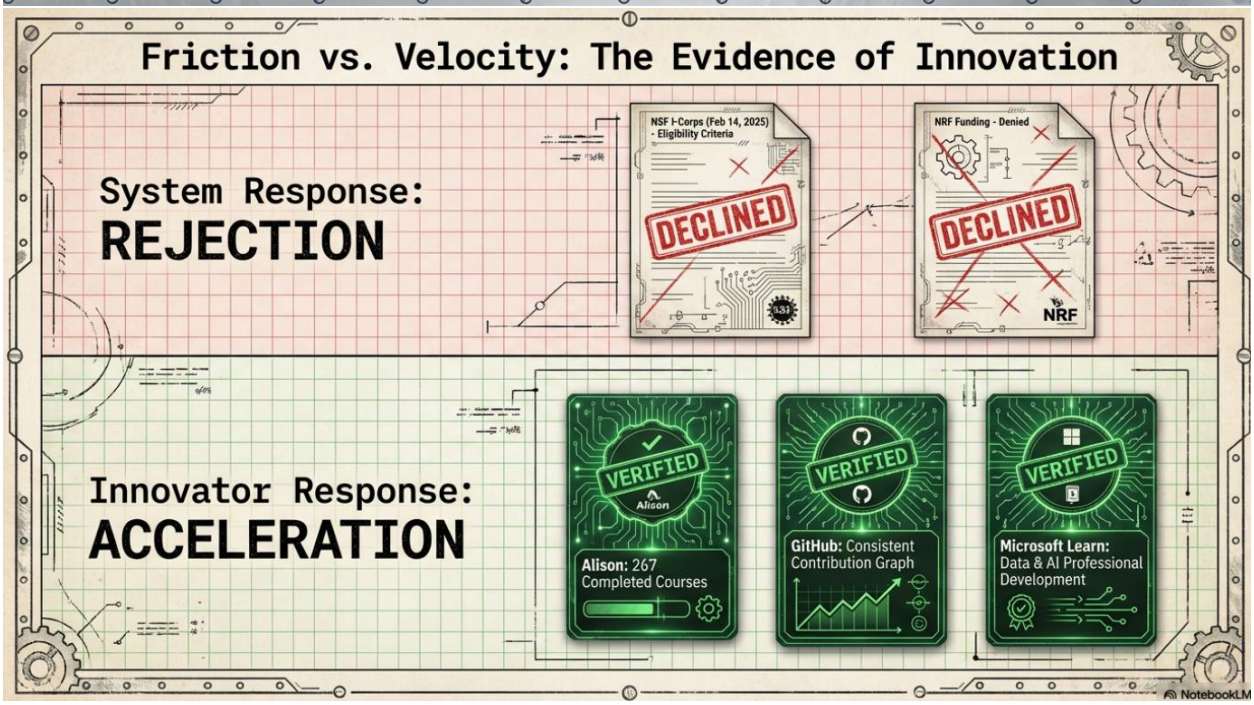
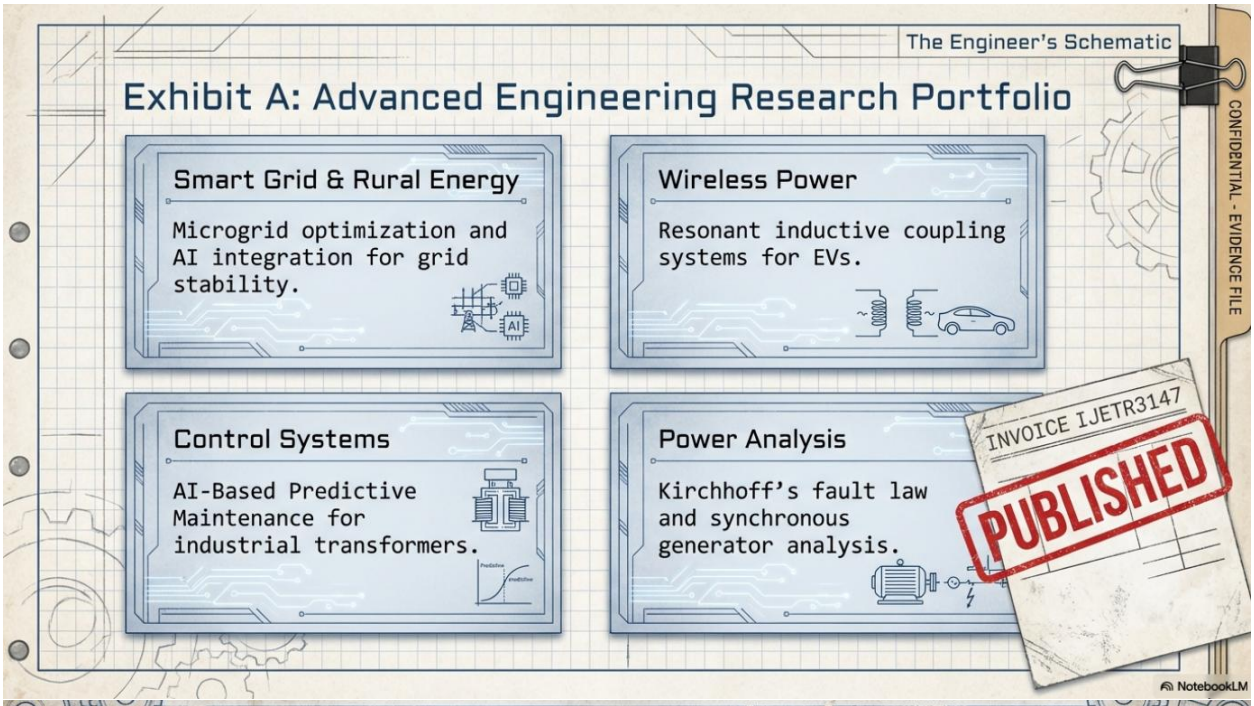

Friction vs. Velocity: The Evidence of Innovation
System Response:
REJECTION
NSF I-Corps (Feb 14, 2025) - Eligibility Criteria
DECLINED
NRF Funding - Denied
DECLINED
NRF
Innovator Response:
ACCELERATION
VERIFIED
Alison
Alison: 267 Completed Courses
VERIFIED
GitHub: Consistent Contribution Graph
VERIFIED
Microsoft Learn: Data & AI Professional Development
NotebookLM


The Engineer's Schematic
Exhibit A: Advanced Engineering Research Portfolio
Smart Grid & Rural Energy
Microgrid optimization and AI integration for grid stability.
AI
Wireless Power
Resonant inductive coupling systems for EVs.
Control Systems
AI-Based Predictive Maintenance for industrial transformers.
Power Analysis
Kirchhoff's fault law and synchronous generator analysis.
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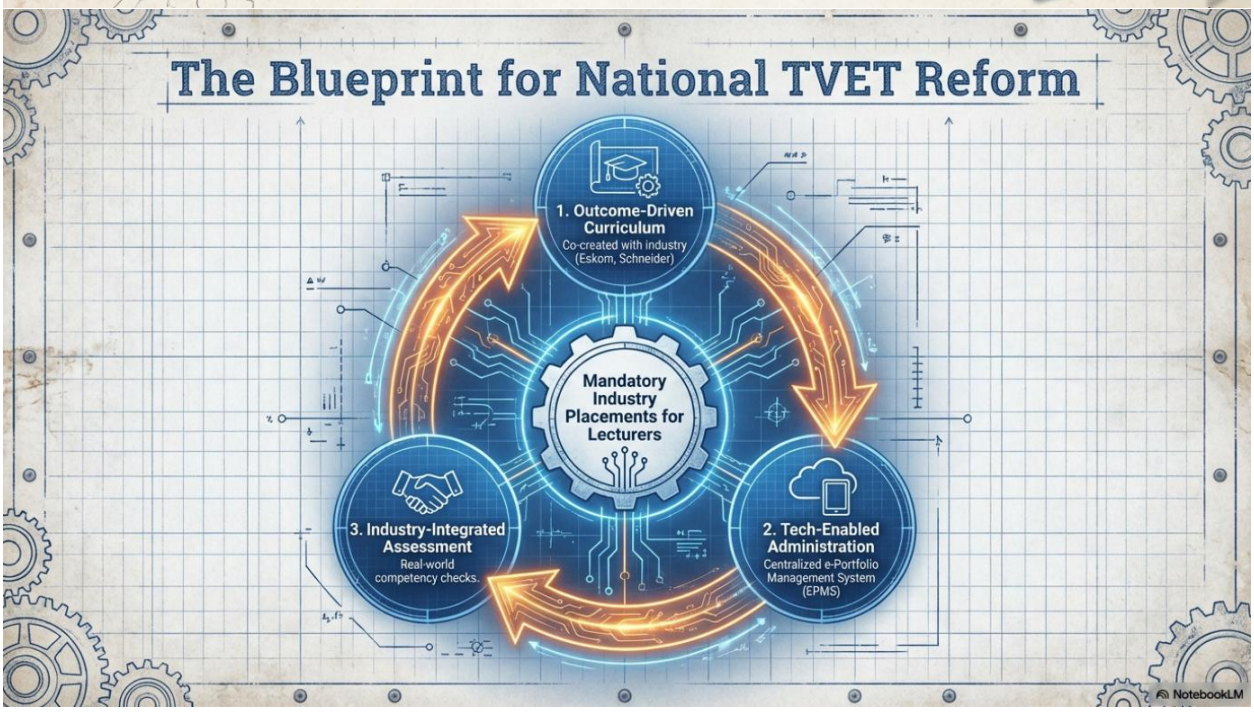
The Blueprint for National TVET Reform
1. Outcome-Driven Curriculum
Co-created with industry (Eskom, Schneider)
Mandatory Industry Placements for Lecturers
2. Tech-Enabled Administration
Centralized e-Portfolio Management System (EPMS)
3. Industry-Integrated Assessment
Real-world competency checks.
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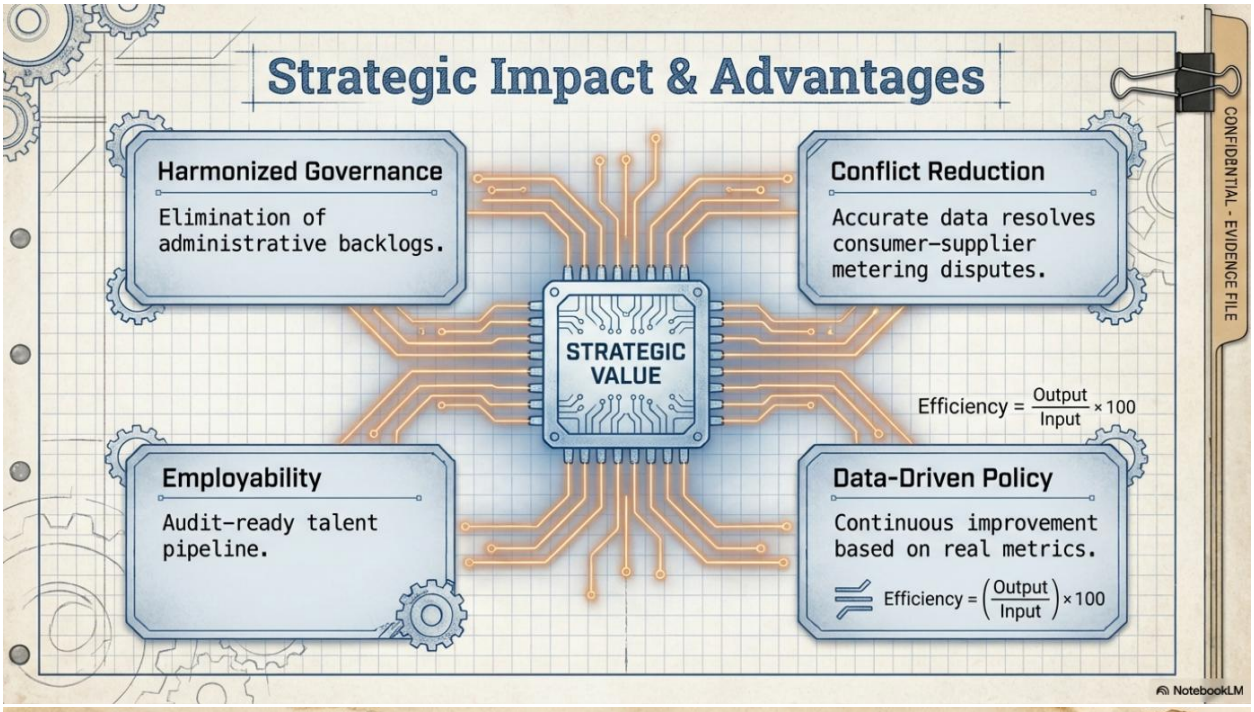
Strategic Impact & Advantages
Harmonized Governance
Elimination of administrative backlogs.
Conflict Reduction
Accurate data resolves consumer-supplier metering disputes.
STRATEGIC VALUE
Efficiency = Output / Input × 100
Employability
Audit-ready talent pipeline.
Data-Driven Policy
Continuous improvement based on real metrics.
Efficiency = (Output / Input) × 100
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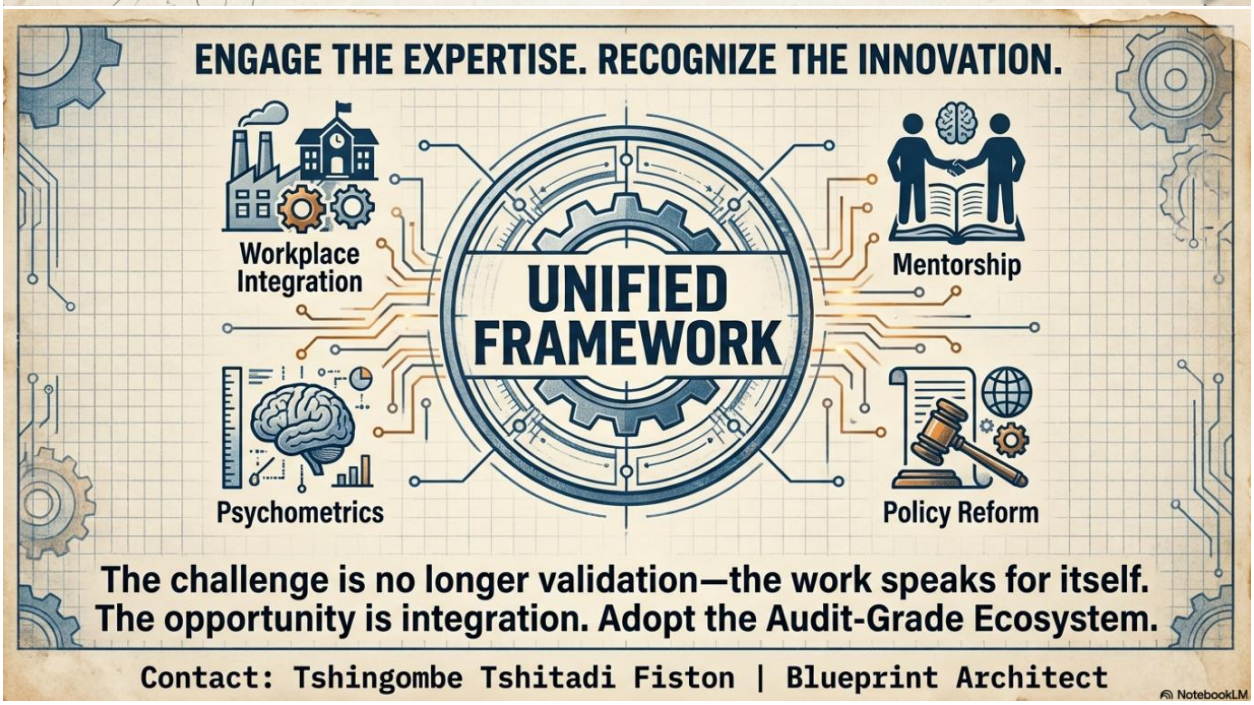

ENGAGE THE EXPERTISE. RECOGNIZE THE INNOVATION.
Workplace Integration
Mentorship
UNIFIED FRAMEWORK
Psychometrics
Policy Reform
The challenge is no longer validation—the work speaks for itself.
The opportunity is integration. Adopt the Audit-Grade Ecosystem.
Contact: Tshingombe Tshitadi Fiston | Blueprint Architect
NotebookLM

The Audit-Grade Career Engine

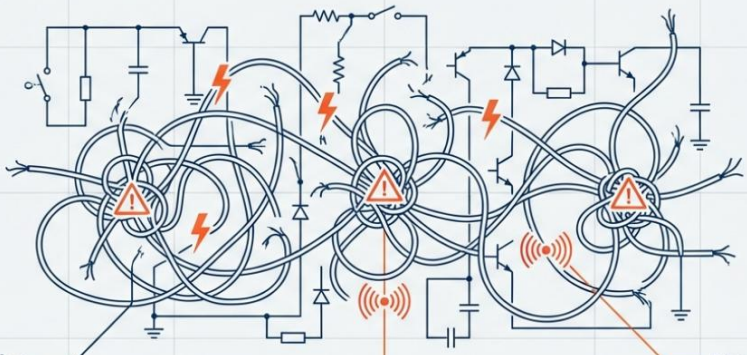
A Blueprint for Verifiable Competence and Systemic Reform

A modular framework that synthesizes formal education, vocational training, and workplace experience into a single, auditable data point.

NotebookLM

Navigating the Labyrinth of Systemic Friction

The Paradox of Prolific Work vs. Systemic Hurdles



The Administrative Deadlock

Extreme backlogs in processing results and certifications by DHET and SAQA.

The Siloed Curriculum

A disconnect between trade theory and the technology-driven needs of modern industry (Eskom, City Power).

The Unaccredited Void

Inconsistent recognition of qualifications leading to irregularities and legal disputes.

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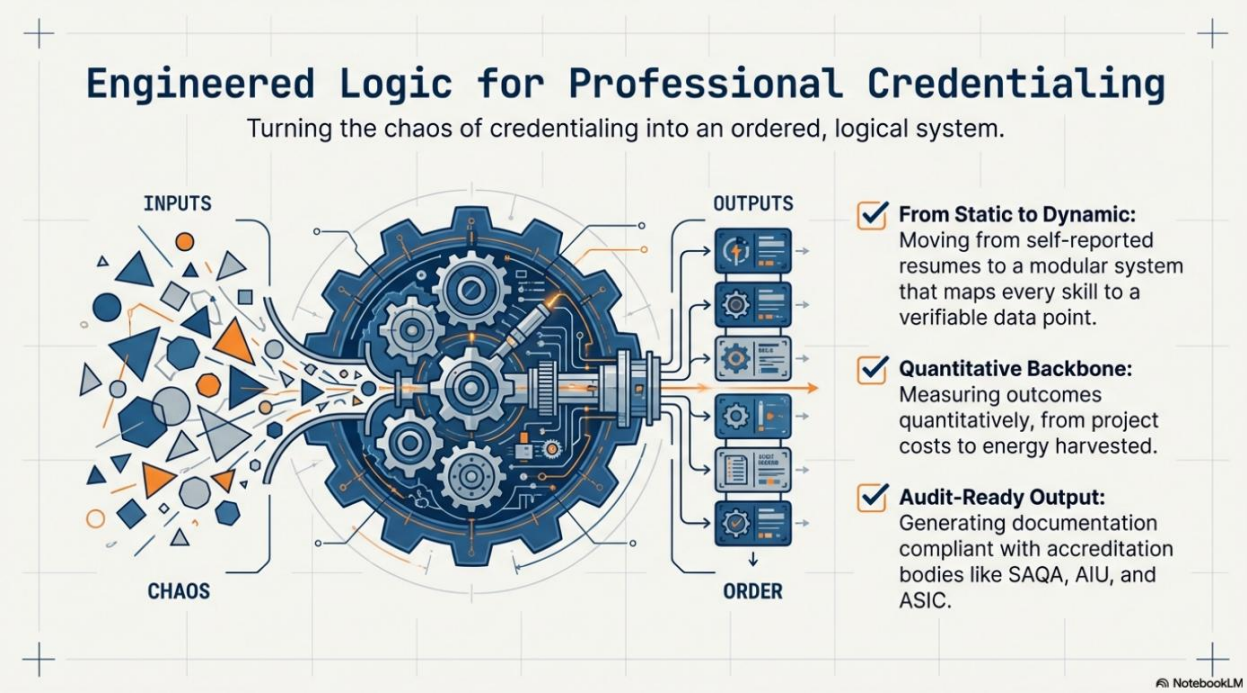
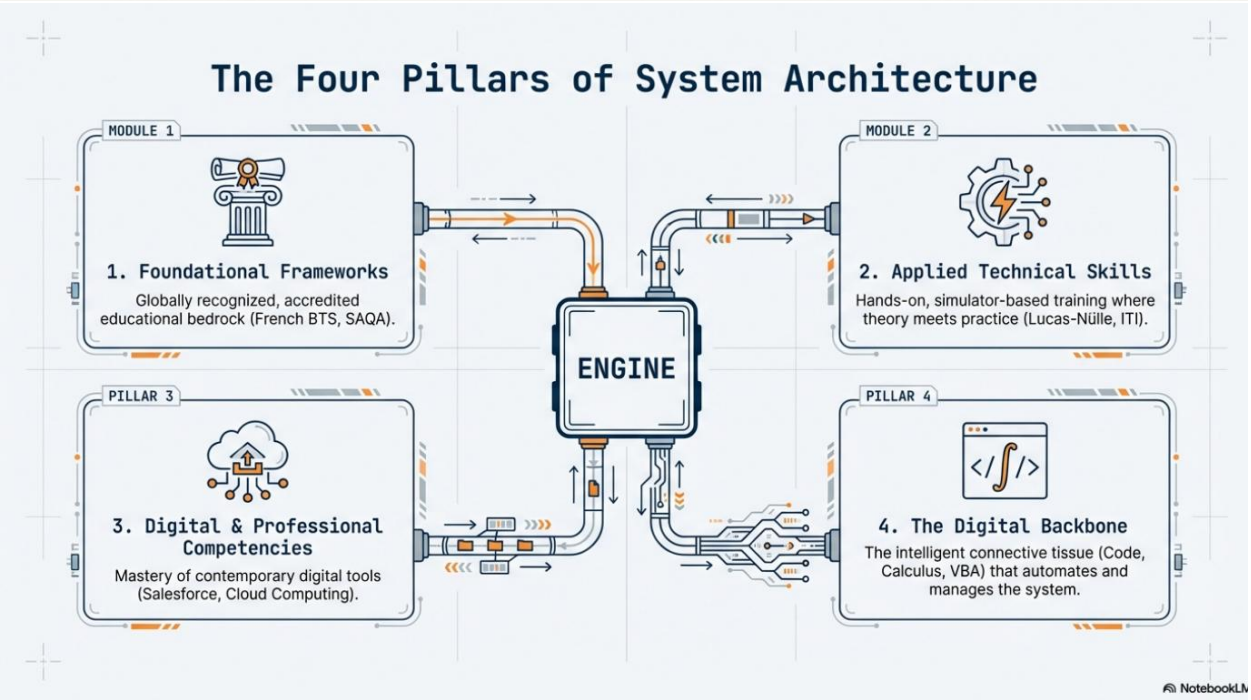
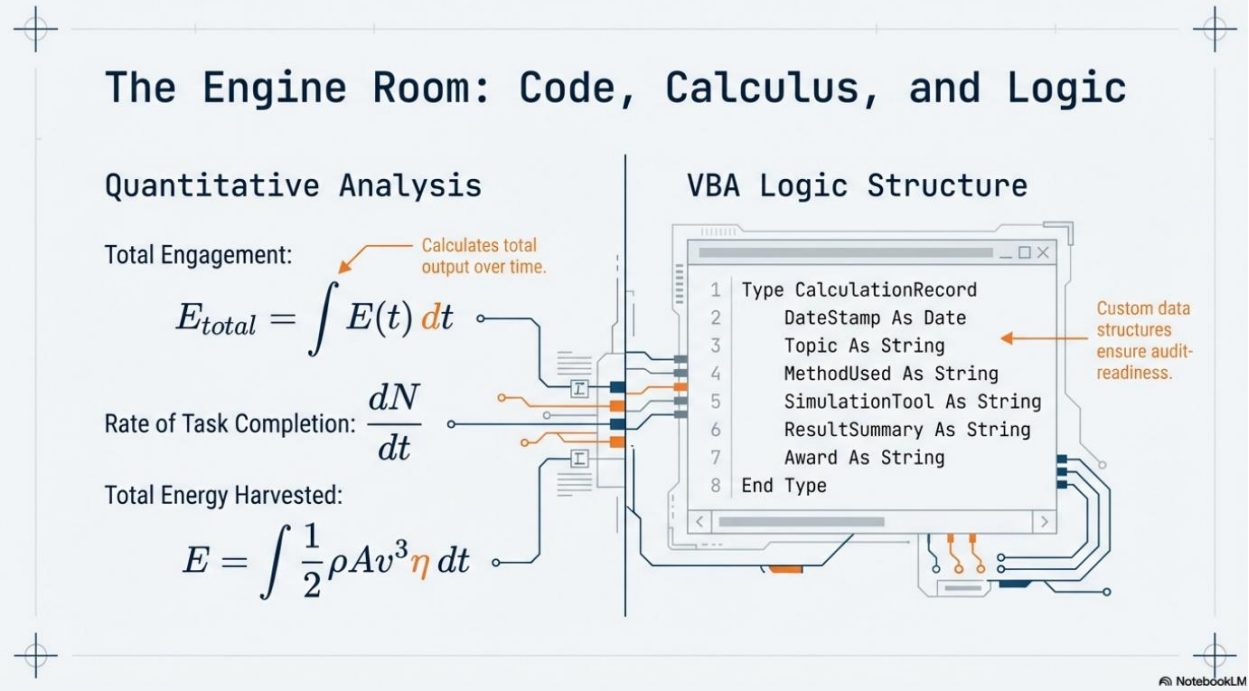
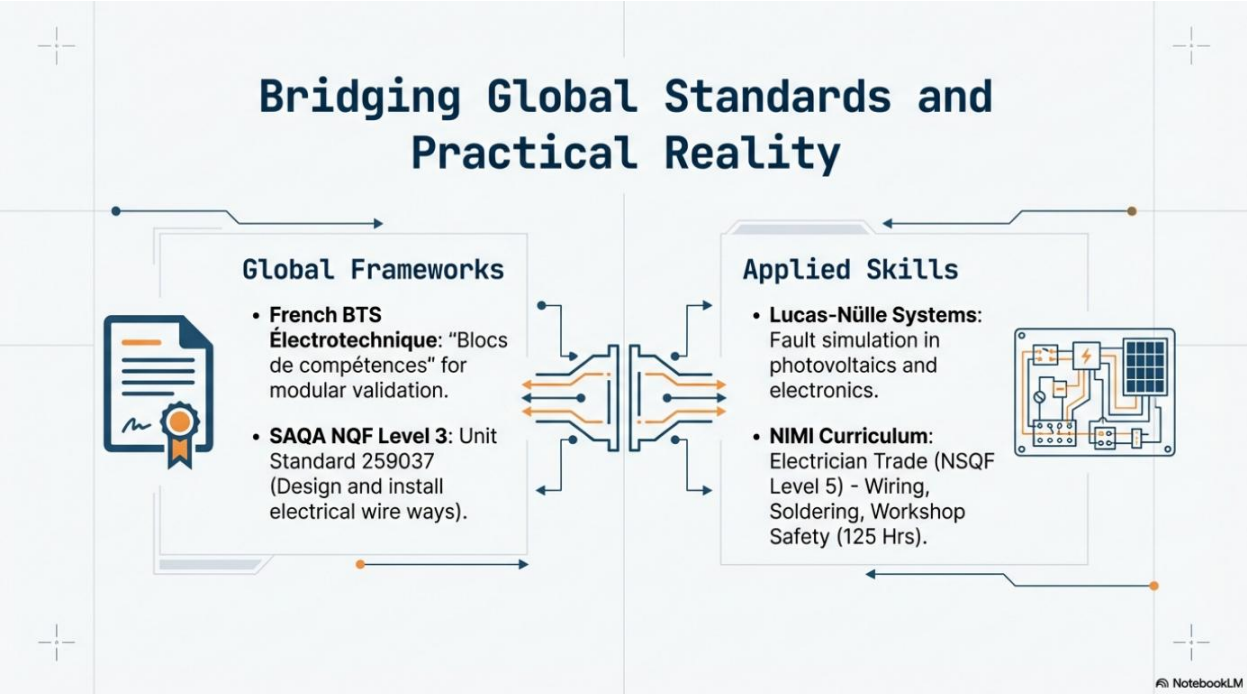
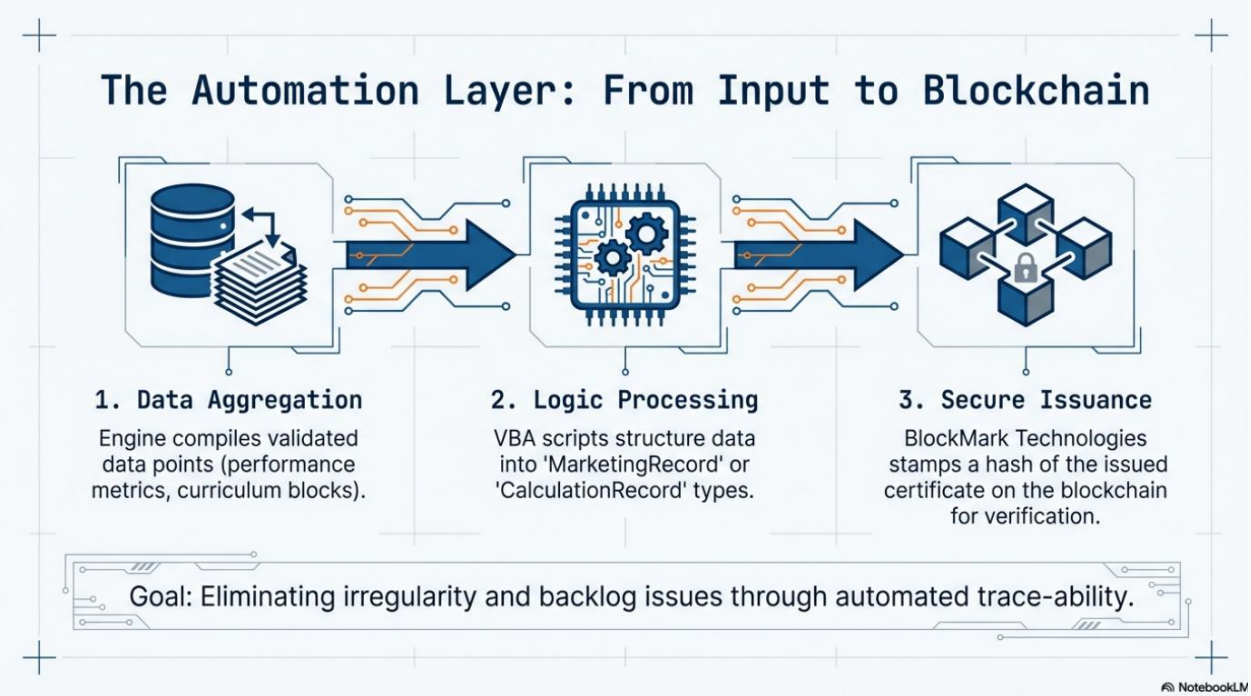
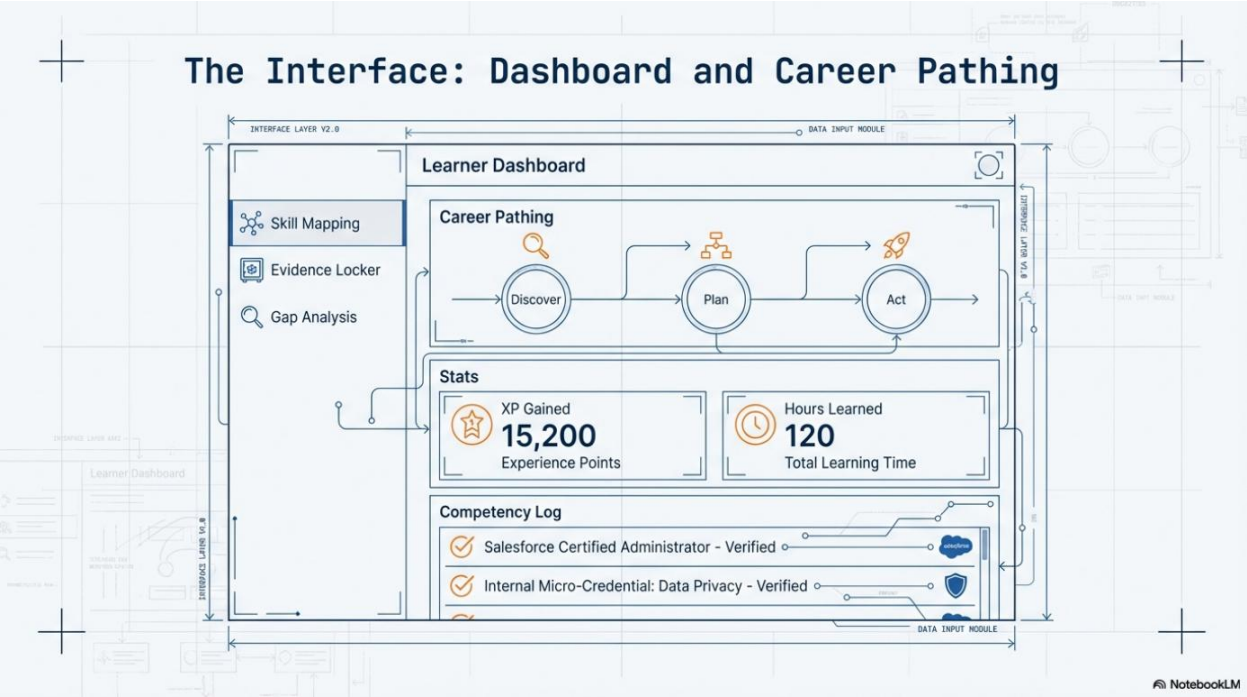

Engineered Logic for Professional Credentialing
Turning the chaos of credentialing into an ordered, logical system.
INPUTS
OUTPUTS
CHAOS
ORDER
From Static to Dynamic: Moving from self-reported resumes to a modular system that maps every skill to a verifiable data point.
Quantitative Backbone: Measuring outcomes quantitatively, from project costs to energy harvested.
Audit-Ready Output: Generating documentation compliant with accreditation bodies like SAQA, AIU, and ASIC.
NotebookLM


The Four Pillars of System Architecture
MODULE 1
1. Foundational Frameworks
Globally recognized, accredited educational bedrock (French BTS, SAQA).
MODULE 2
2. Applied Technical Skills
Hands-on, simulator-based training where theory meets practice (Lucas-Nülle, ITI).
ENGINE
PILLAR 3
3. Digital & Professional Competencies
Mastery of contemporary digital tools (Salesforce, Cloud Computing).
PILLAR 4
4. The Digital Backbone
The intelligent connective tissue (Code, Calculus, VBA) that automates and manages the system.
NotebookLM


The Engine Room: Code, Calculus, and Logic
Quantitative Analysis
Total Engagement:
Calculates total output over time.
$E_{total} = \int E(t)\,dt$
Rate of Task Completion: $\frac{dN}{dt}$
Total Energy Harvested:
$E = \int \frac{1}{2}\rho A v^3 \eta\,dt$
VBA Logic Structure
1 Type CalculationRecord
2 DateStamp As Date
3 Topic As String
4 MethodUsed As String
5 SimulationTool As String
6 ResultSummary As String
7 Award As String
8 End Type
Custom data structures ensure audit-readiness.
NotebookLM


Bridging Global Standards and Practical Reality
Global Frameworks
• French BTS Électrotechnique: "Blocs de compétences" for modular validation.
• SAQA NQF Level 3: Unit Standard 259037 (Design and install electrical wire ways).
Applied Skills
• Lucas-Nülle Systems: Fault simulation in photovoltaics and electronics.
• NIMI Curriculum: Electrician Trade (NSQF Level 5) - Wiring, Soldering, Workshop Safety (125 Hrs).
NotebookLM


The Automation Layer: From Input to Blockchain
1. Data Aggregation
Engine compiles validated data points (performance metrics, curriculum blocks).
2. Logic Processing
VBA scripts structure data into 'MarketingRecord' or 'CalculationRecord' types.
3. Secure Issuance
BlockMark Technologies stamps a hash of the issued certificate on the blockchain for verification.
Goal: Eliminating irregularity and backlog issues through automated trace-ability.
NotebookLM


The Interface: Dashboard and Career Pathing
INTERFACE LAYER V2.0
DATA INPUT MODULE
Learner Dashboard
Skill Mapping
Evidence Locker
Gap Analysis
Career Pathing
Discover
Plan
Act
Stats
XP Gained
15,200
Experience Points
Hours Learned
120
Total Learning Time
Competency Log
Salesforce Certified Administrator - Verified
Internal Micro-Credential: Data Privacy - Verified
DATA INPUT MODULE
NotebookLM

Proof of Concept: The Tshittadi Dossier

Top Half - The Friction

Traditional Funding Bodies
(NSF I-Corps, NRF)

Declined due to "eligibility requirements" and lack of accredited institution affiliation.

Bottom Half - The Validation

VERIFIED
Internet Archive: Published "Electrical Trade Theory Engineering Nated".

VERIFIED
Alison: Verified Diploma in Electrical Studies.

VERIFIED
GitHub: Active repositories for career-discovery-science-science-mentoring.

The system failed the individual, but the individual's Engine validated the expertise.

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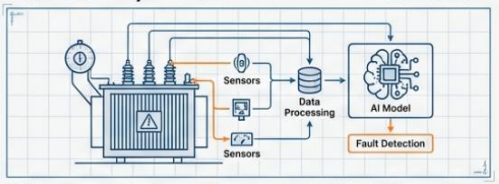
Exhibit A: Advanced Engineering & Power Systems

Smart Grid & Rural Energy

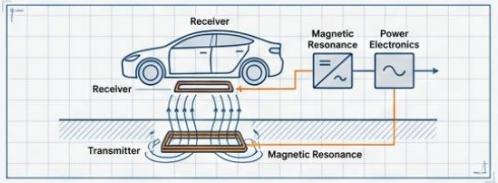
Optimization of microgrids, AI integration in power grid control, and rural energy stability.

Control Systems



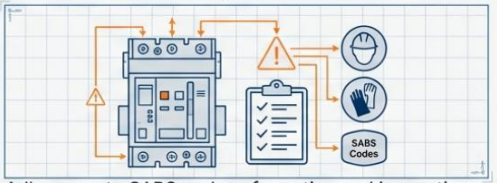
AI-based predictive maintenance and fault detection in power transformers.

Wireless Power



High-efficiency resonant inductive coupling for EVs.

Industrial Safety



Adherence to SABS codes of practice and inspection of circuit breaker gear.

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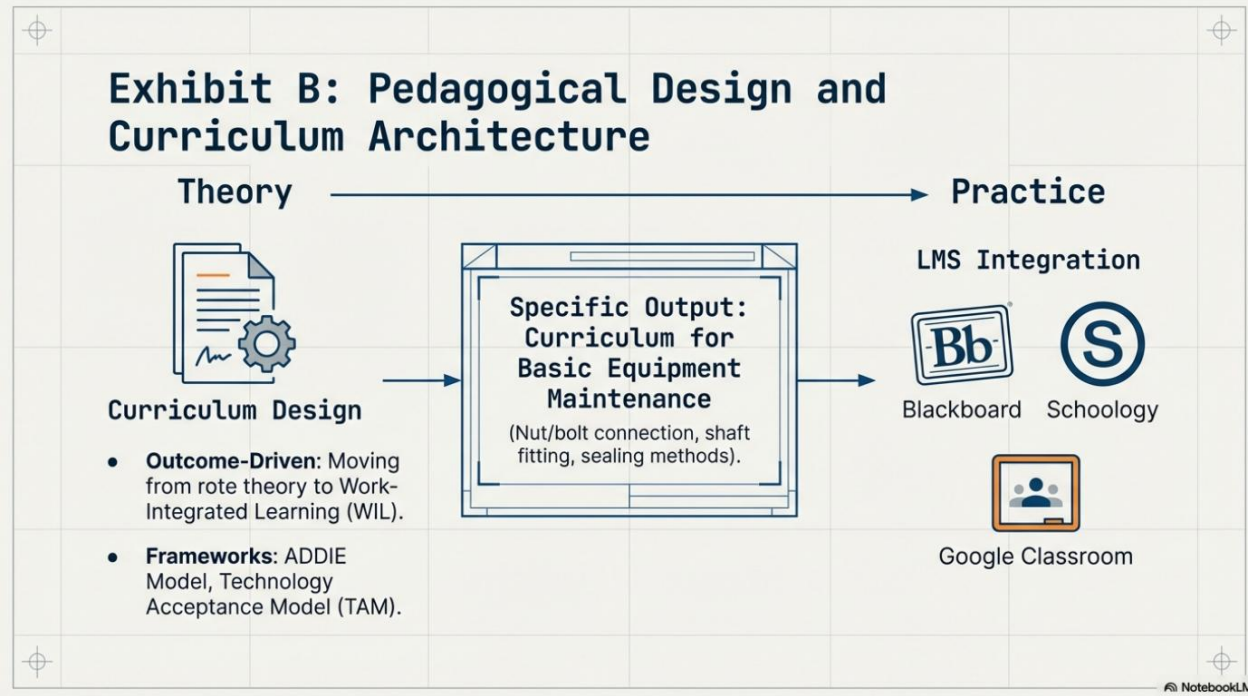
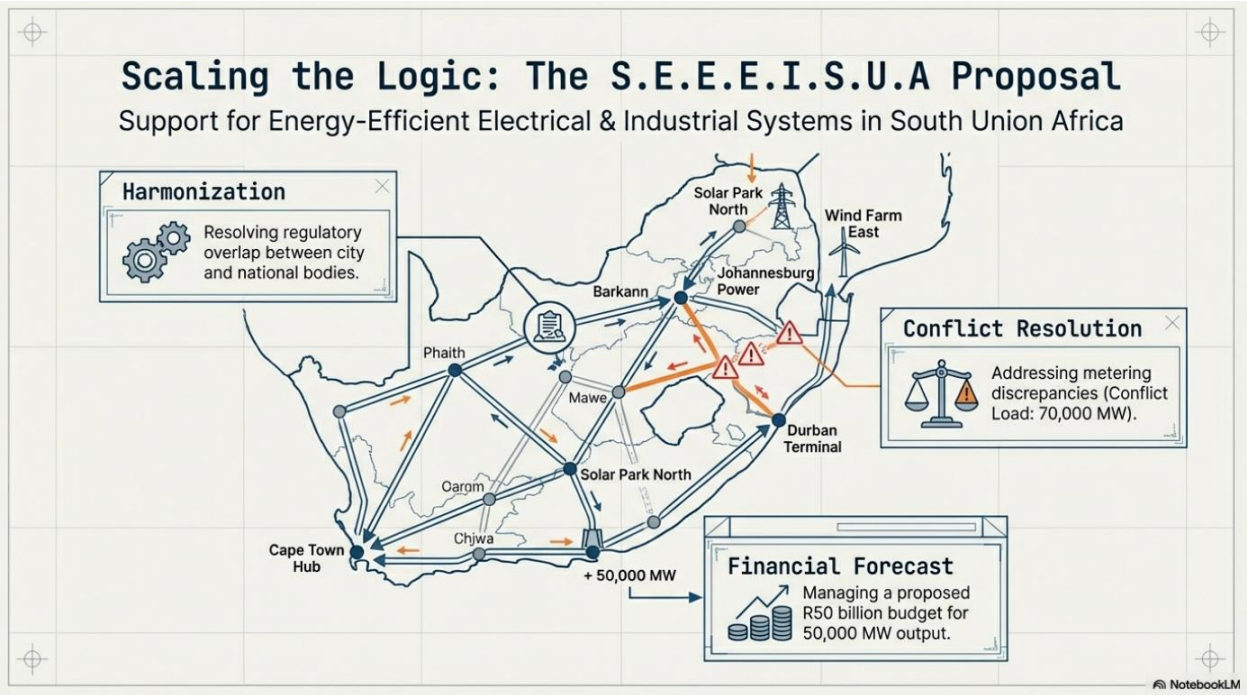
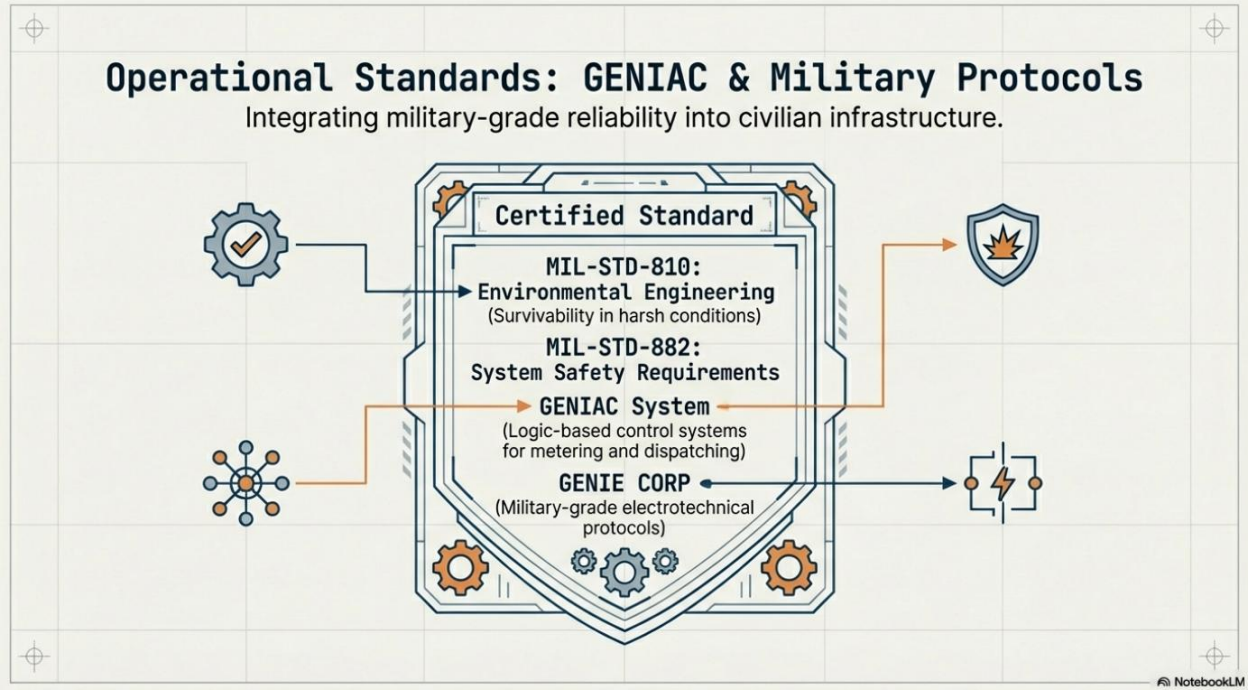
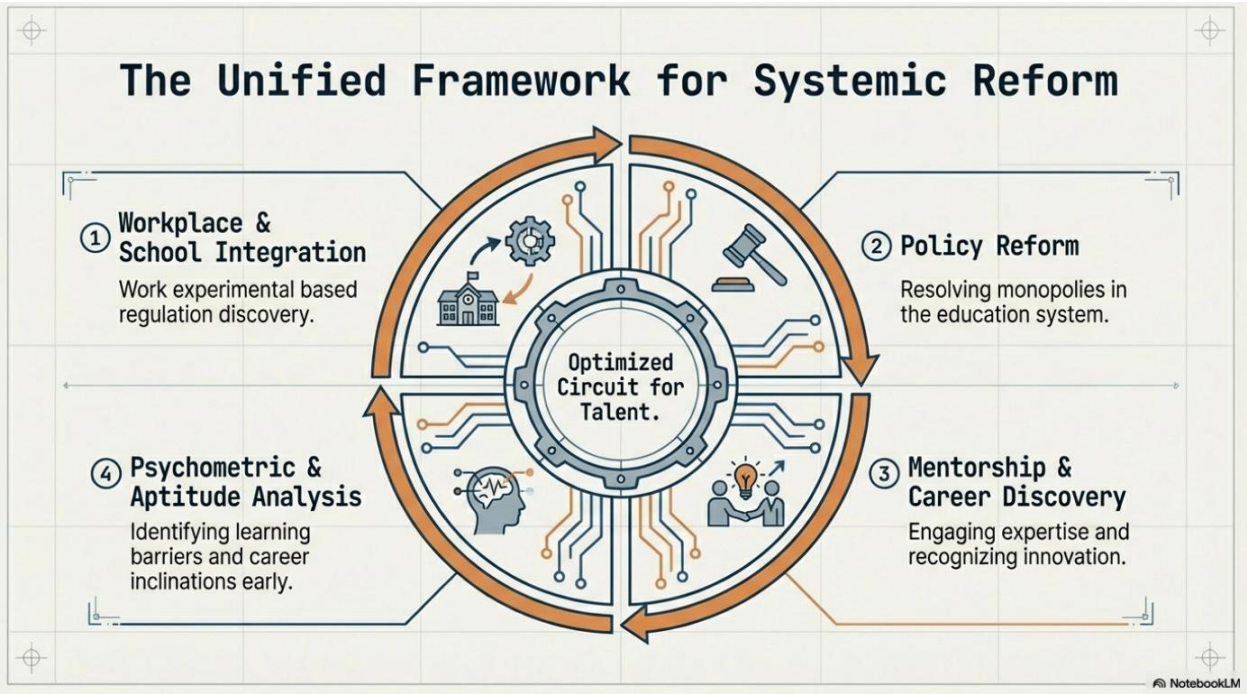
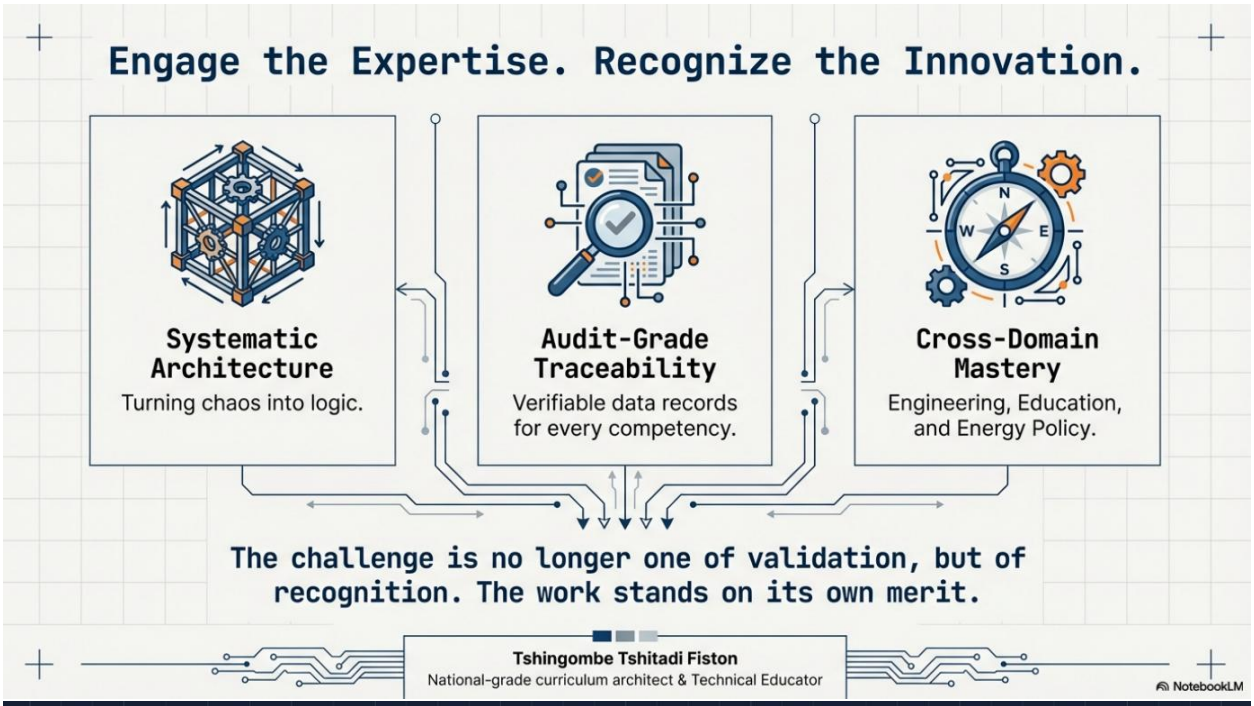


Exhibit B: Pedagogical Design and Curriculum Architecture
Theory
Practice
Curriculum Design
Outcome-Driven: Moving from rote theory to Work-Integrated Learning (WIL).
Frameworks: ADDIE Model, Technology Acceptance Model (TAM).
Specific Output: Curriculum for Basic Equipment Maintenance
(Nut/bolt connection, shaft fitting, sealing methods).
LMS Integration
Blackboard
Schoology
Google Classroom
NotebookLM

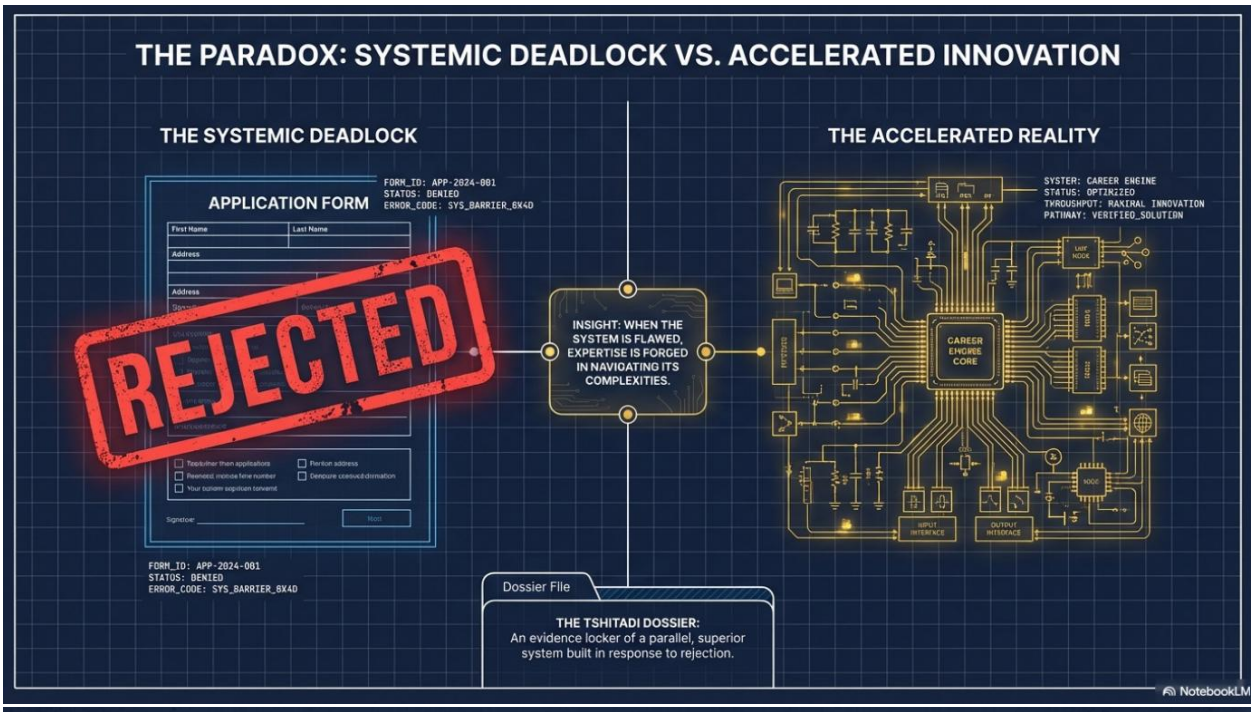

Scaling the Logic: The S.E.E.E.I.S.U.A Proposal
Support for Energy-Efficient Electrical & Industrial Systems in South Union Africa
Harmonization
Resolving regulatory overlap between city and national bodies.
Solar Park North
Wind Farm East
Johannesburg Power
Barkann
Phaith
Mawe
Durban Terminal
Carom
Solar Park North
Chjwa
Cape Town Hub
+ 50,000 MW
Conflict Resolution
Addressing metering discrepancies (Conflict Load: 70,000 MW).
Financial Forecast
Managing a proposed R50 billion budget for 50,000 MW output.
NotebookLM

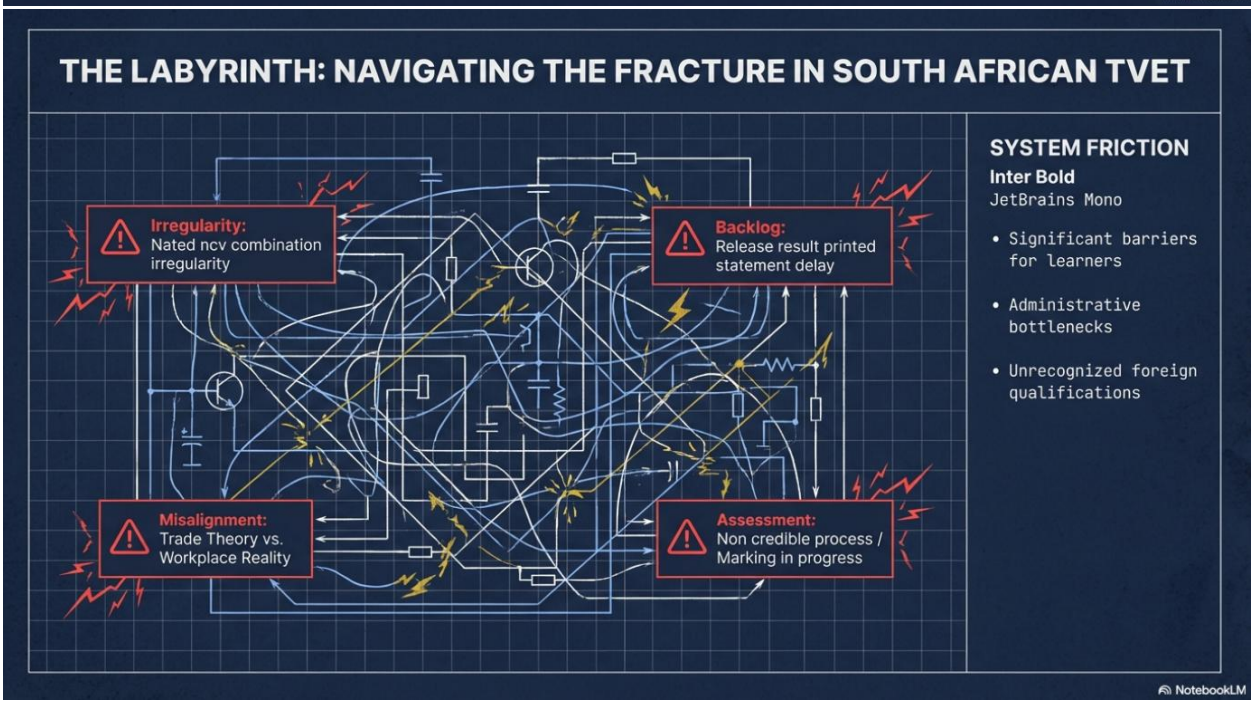

Operational Standards: GENIAC & Military Protocols
Integrating military-grade reliability into civilian infrastructure.
Certified Standard
MIL-STD-810:
Environmental Engineering
(Survivability in harsh conditions)
MIL-STD-882:
System Safety Requirements
GENIAC System
(Logic-based control systems
for metering and dispatching)
GENIE CORP
(Military-grade electrotechnical
protocols)
NotebookLM

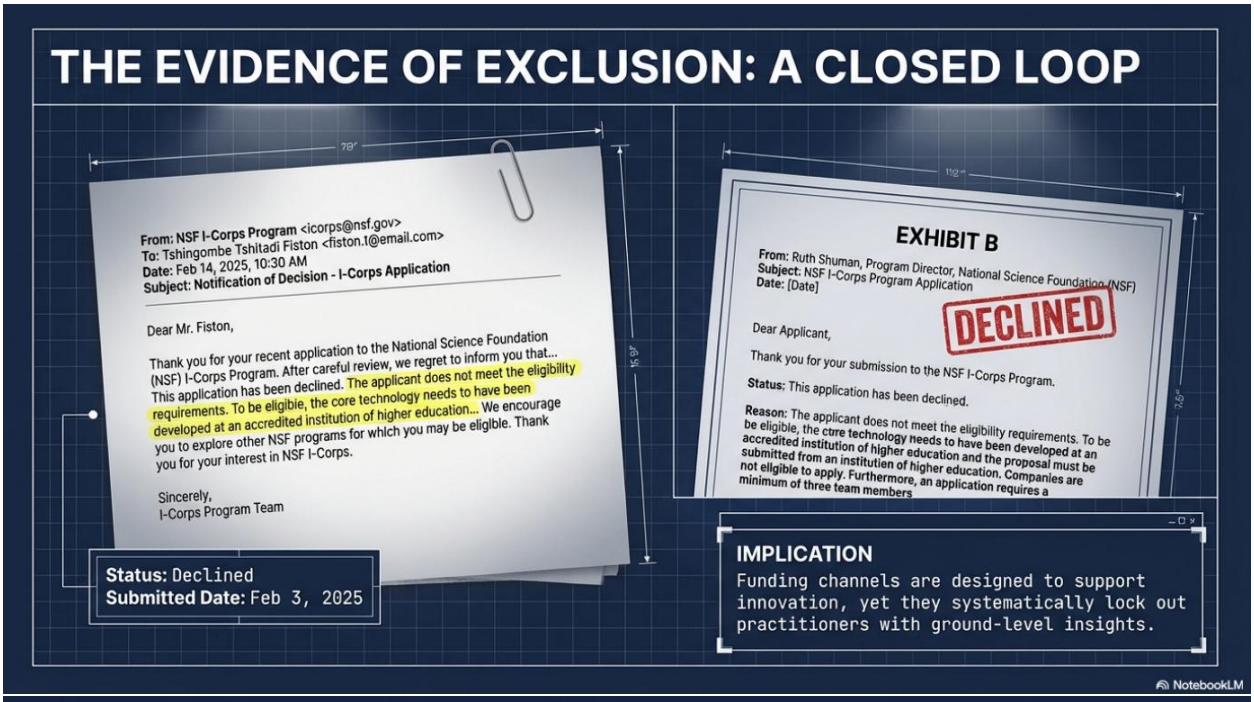

The Unified Framework for Systemic Reform
1 Workplace & School Integration
Work experimental based regulation discovery.
2 Policy Reform
Resolving monopolies in the education system.
Optimized Circuit for Talent.
4 Psychometric & Aptitude Analysis
Identifying learning barriers and career inclinations early.
3 Mentorship & Career Discovery
Engaging expertise and recognizing innovation.
NotebookLM

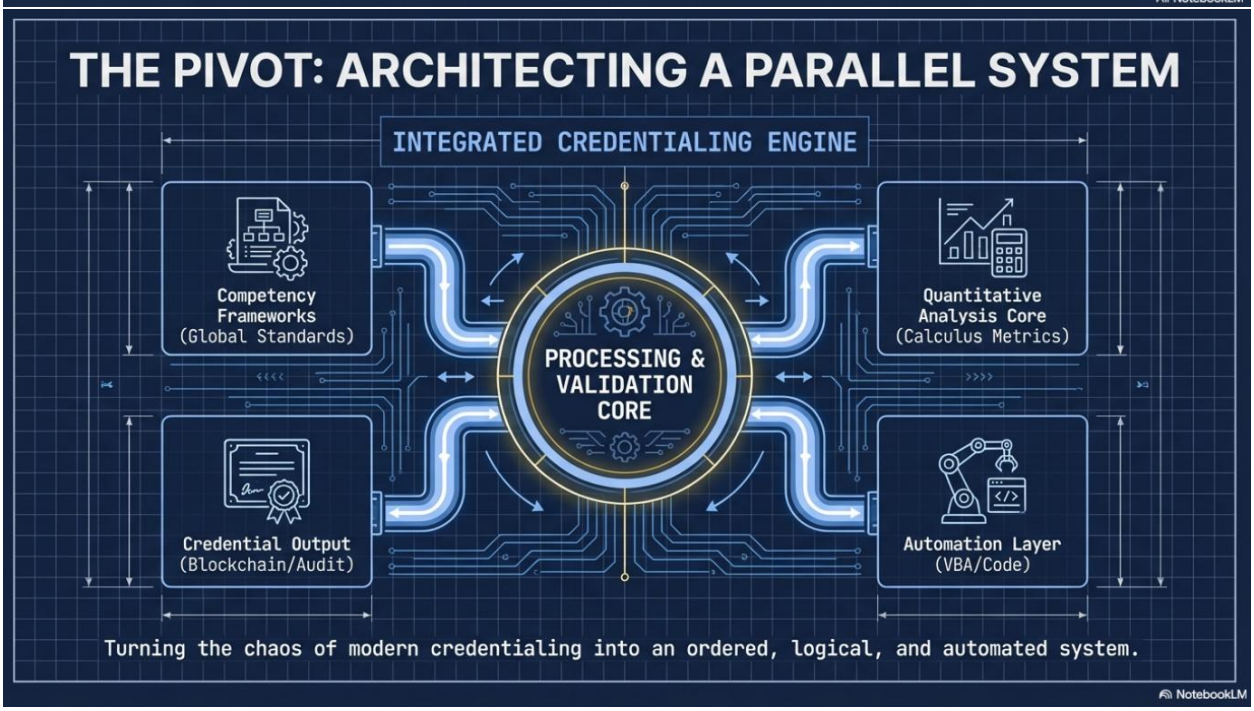

Engage the Expertise. Recognize the Innovation.
Systematic Architecture
Turning chaos into logic.
Audit-Grade Traceability
Verifiable data records for every competency.
Cross-Domain Mastery
Engineering, Education, and Energy Policy.
The challenge is no longer one of validation, but of recognition. The work stands on its own merit.
Tshingombe Tshitadi Fiston
National-grade curriculum architect & Technical Educator
NotebookLM

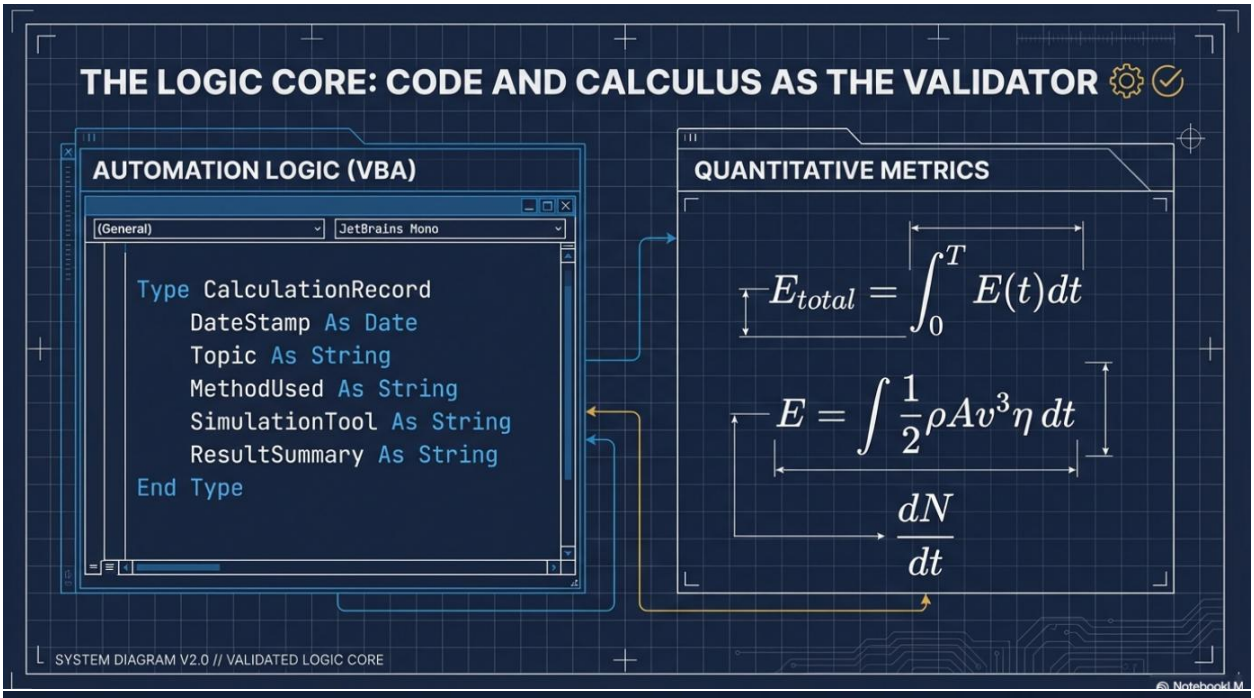
The Audit-Grade Career Engine
A Blueprint for Verifiable Competence
A modular framework that synthesizes formal education, vocational training, and workplace experience into a single, auditable system.
Author: Tshingombe Tshitadi Fiston //
NotebookLM

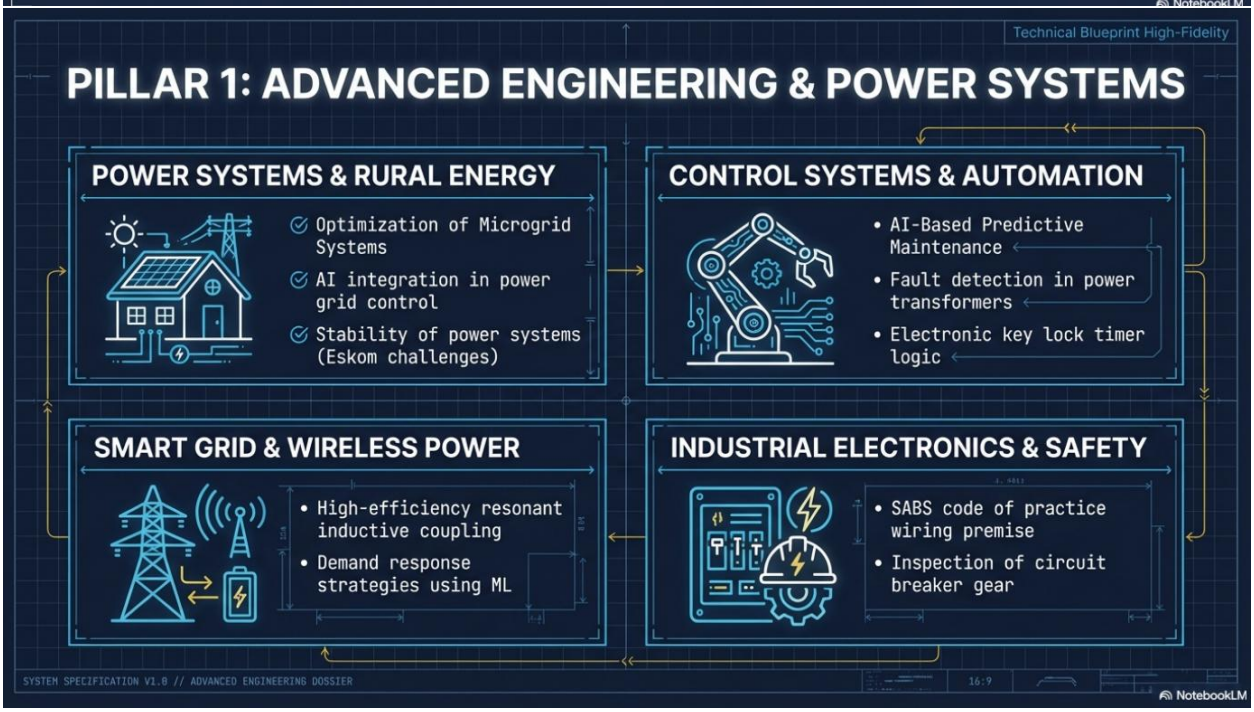

THE PARADOX: SYSTEMIC DEADLOCK VS. ACCELERATED INNOVATION
THE SYSTEMIC DEADLOCK
APPLICATION FORM
FORM_ID: APP-2024-081
STATUS: DENIED
ERROR_CODE: SYS_BARRIER_6X4D
First Name
Last Name
Address
REJECTED
FORM_ID: APP-2024-081
STATUS: DENIED
ERROR_CODE: SYS_BARRIER_6X4D
INSIGHT: WHEN THE SYSTEM IS FLAWED, EXPERTISE IS FORGED IN NAVIGATING ITS COMPLEXITIES.
THE ACCELERATED REALITY
CAREER ENGINE CORE
Dossier File
THE TSHITADI DOSSIER:
An evidence locker of a parallel, superior system built in response to rejection.
NotebookLM

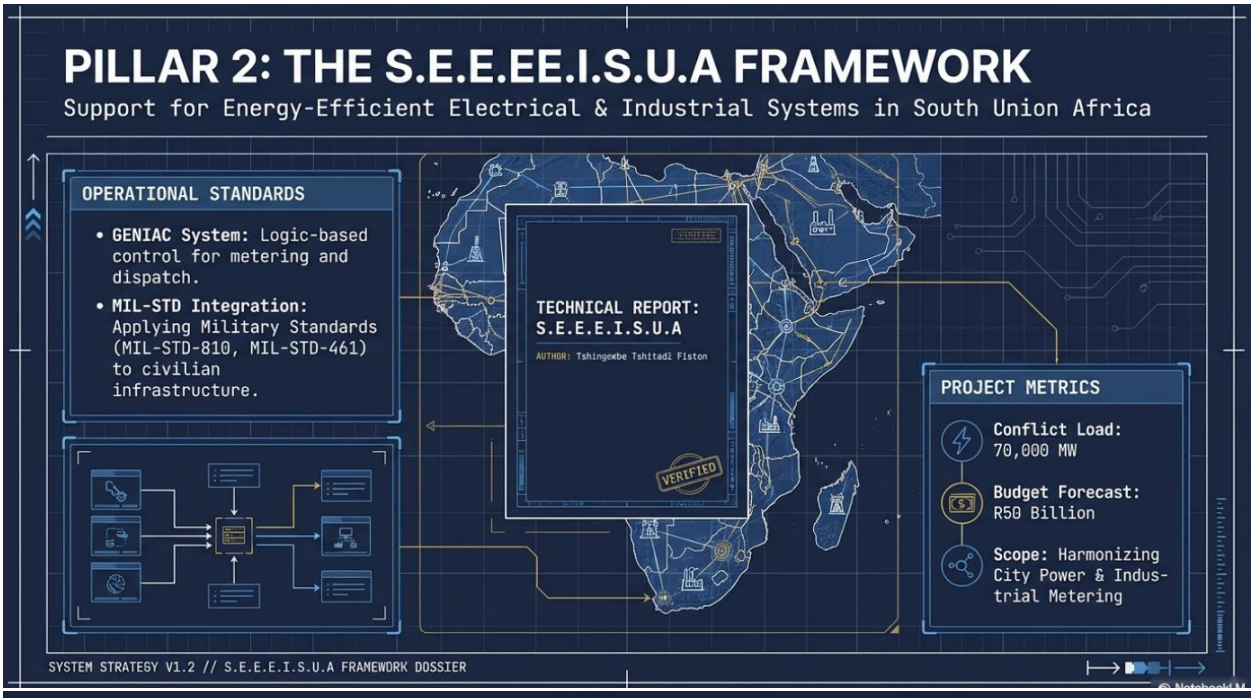

THE LABYRINTH: NAVIGATING THE FRACTURE IN SOUTH AFRICAN TVET
Irregularity:
Nated ncv combination irregularity
Backlog:
Release result printed statement delay
Misalignment:
Trade Theory vs. Workplace Reality
Assessment:
Non credible process / Marking in progress
SYSTEM FRICTION
Inter Bold
JetBrains Mono
• Significant barriers for learners
• Administrative bottlenecks
• Unrecognized foreign qualifications
NotebookLM

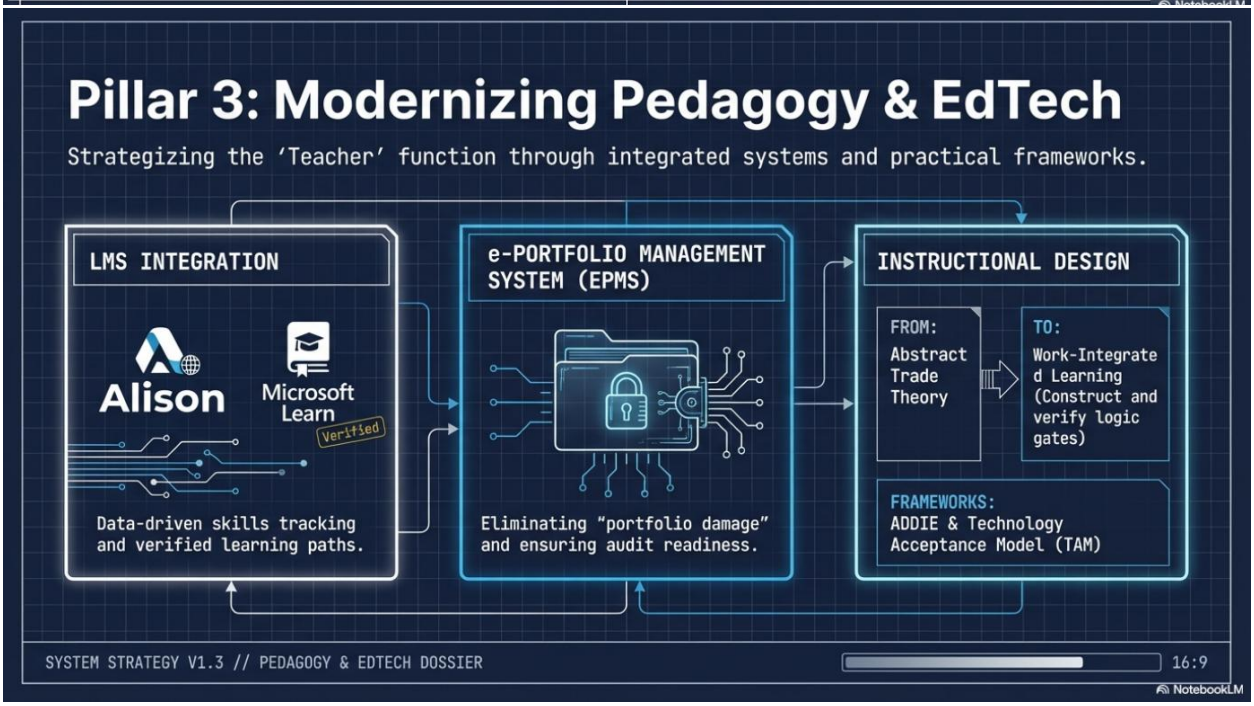

THE EVIDENCE OF EXCLUSION: A CLOSED LOOP
From: NSF I-Corps Program <icorps@nsf.gov>
To: Tshingombe Tshitadi Fiston <fiston.t@email.com>
Date: Feb 14, 2025, 10:30 AM
Subject: Notification of Decision - I-Corps Application
Dear Mr. Fiston,
Thank you for your recent application to the National Science Foundation (NSF) I-Corps Program. After careful review, we regret to inform you that... This application has been declined. The applicant does not meet the eligibility requirements. To be eligible, the core technology needs to have been developed at an accredited institution of higher education... We encourage you to explore other NSF programs for which you may be eligible. Thank you for your interest in NSF I-Corps.
Sincerely,
I-Corps Program Team
Status: Declined
Submitted Date: Feb 3, 2025
EXHIBIT B
From: Ruth Shuman, Program Director, National Science Foundation (NSF)
Subject: NSF I-Corps Program Application
Date: [Date]
DECLINED
Dear Applicant,
Thank you for your submission to the NSF I-Corps Program.
Status: This application has been declined.
Reason: The applicant does not meet the eligibility requirements. To be be eligible, the ctre technology needs to have been developed at an accredited institution of higher education and the proposal must be submitted from an institution of higher education. Companies are not eligible to apply. Furthermore, an application requires a minimum of three team members
IMPLICATION
Funding channels are designed to support innovation, yet they systematically lock out practitioners with ground-level insights.
NotebookLM

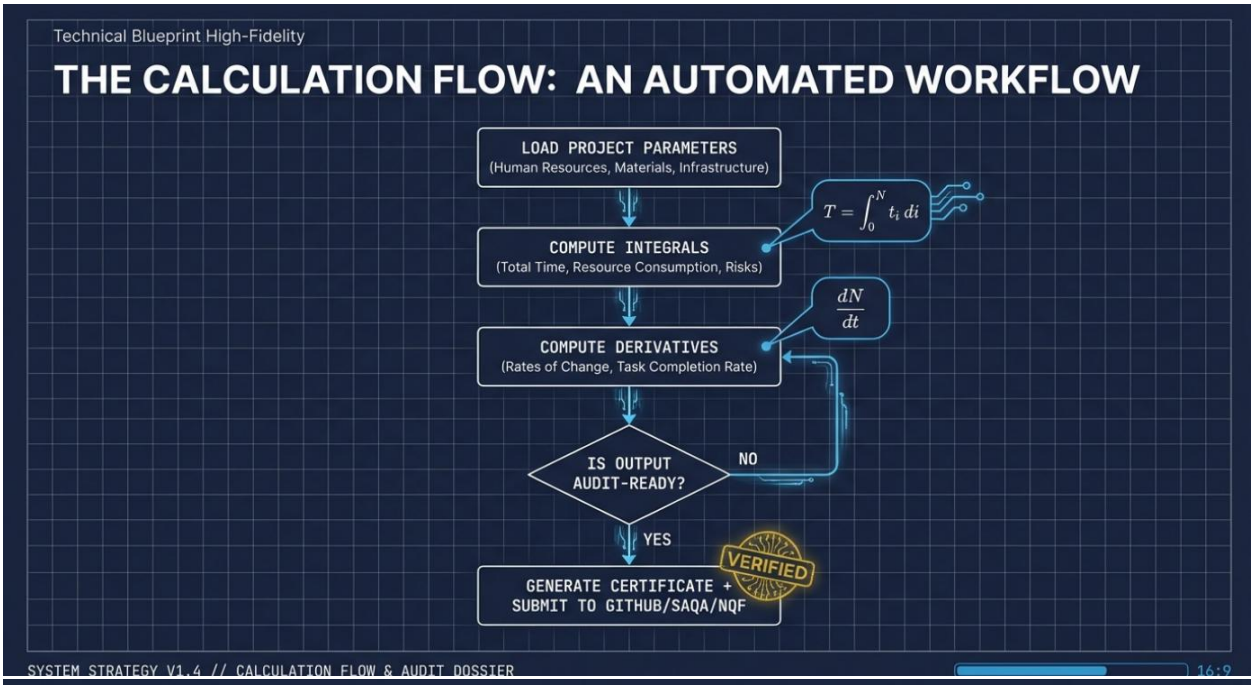

THE PIVOT: ARCHITECTING A PARALLEL SYSTEM
INTEGRATED CREDENTIALING ENGINE
Competency Frameworks (Global Standards)
Quantitative Analysis Core (Calculus Metrics)
PROCESSING & VALIDATION CORE
Credential Output (Blockchain/Audit)
Automation Layer (VBA/Code)
Turning the chaos of modern credentialing into an ordered, logical, and automated system.
NotebookLM

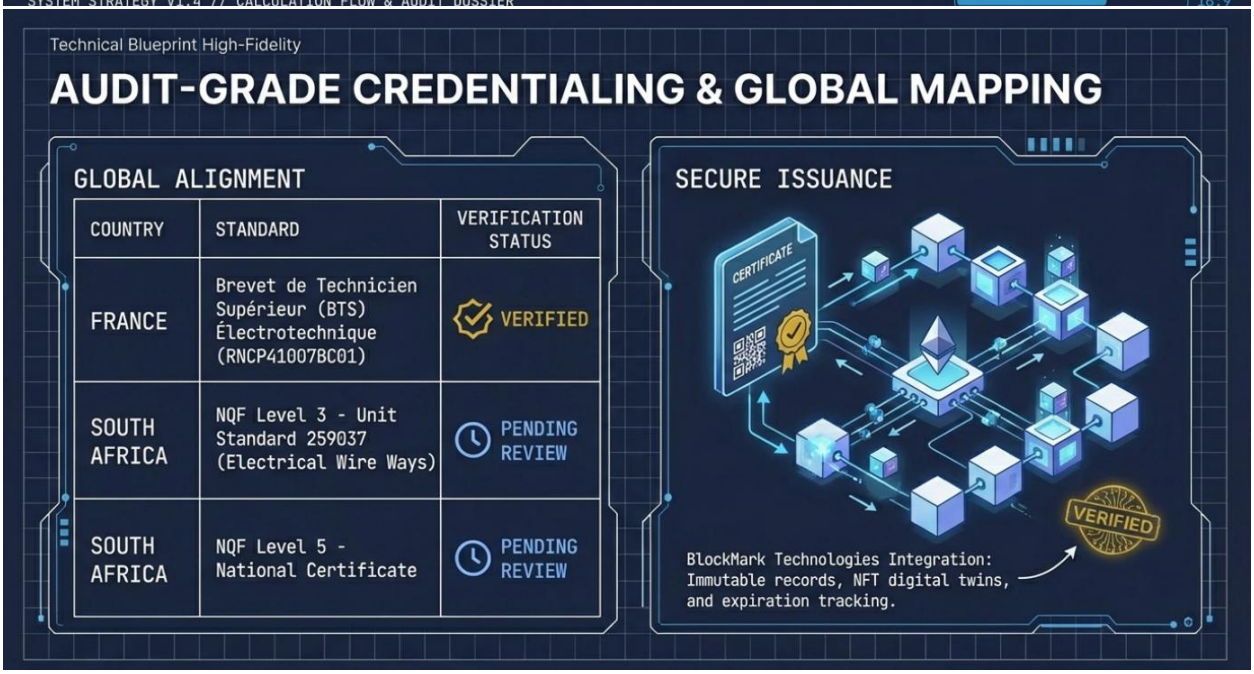

THE LOGIC CORE: CODE AND CALCULUS AS THE VALIDATOR
AUTOMATION LOGIC (VBA)
(General)
JetBrains Mono
Type CalculationRecord
DateStamp As Date
Topic As String
MethodUsed As String
SimulationTool As String
ResultSummary As String
End Type
QUANTITATIVE METRICS
$E_{total} = \int_0^T E(t)dt$
$E = \int \frac{1}{2}\rho A v^3 \eta \, dt$
$\frac{dN}{dt}$
SYSTEM DIAGRAM V2.0 // VALIDATED LOGIC CORE
NotebookLM

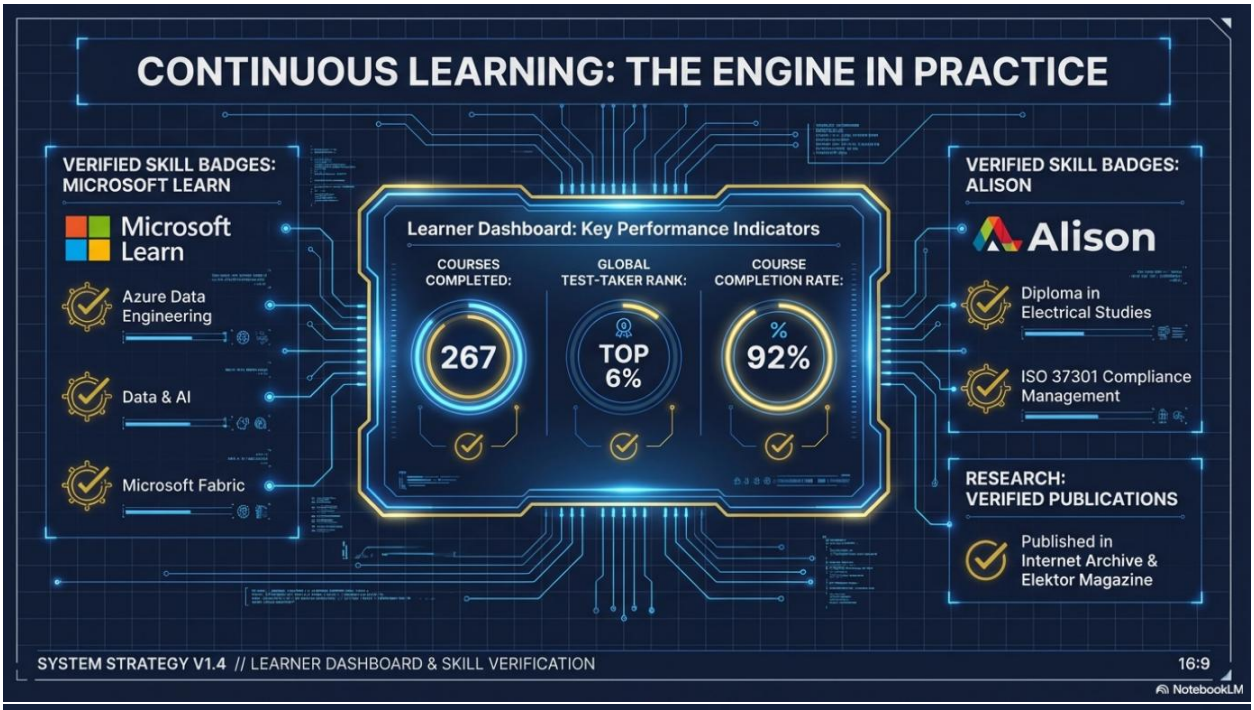

Technical Blueprint High-Fidelity
PILLAR 1: ADVANCED ENGINEERING & POWER SYSTEMS
POWER SYSTEMS & RURAL ENERGY
Optimization of Microgrid Systems
AI integration in power grid control
Stability of power systems (Eskom challenges)
CONTROL SYSTEMS & AUTOMATION
AI-Based Predictive Maintenance
Fault detection in power transformers
Electronic key lock timer logic
SMART GRID & WIRELESS POWER
High-efficiency resonant inductive coupling
Demand response strategies using ML
INDUSTRIAL ELECTRONICS & SAFETY
SABS code of practice wiring premise
Inspection of circuit breaker gear
SYSTEM SPECIFICATION V1.0 // ADVANCED ENGINEERING DOSSIER
16:9
NotebookLM

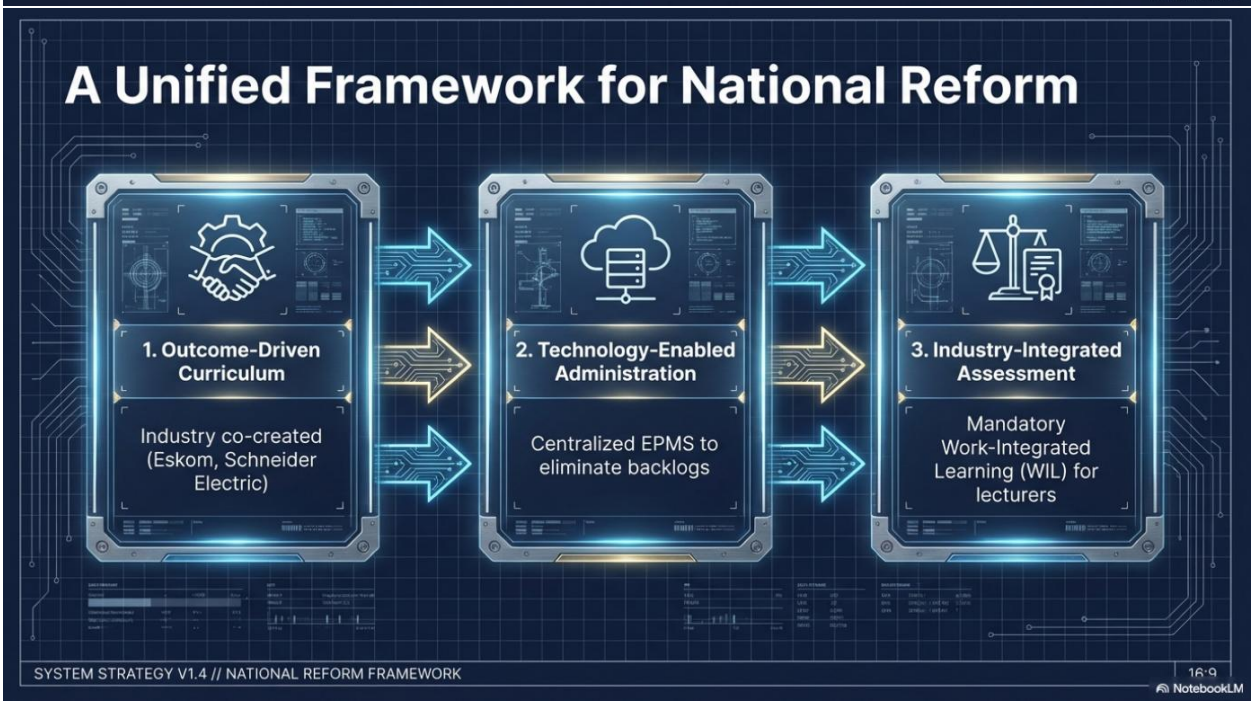

PILLAR 2: THE S.E.E.EE.I.S.U.A FRAMEWORK
Support for Energy-Efficient Electrical & Industrial Systems in South Union Africa
OPERATIONAL STANDARDS
• GENIAC System: Logic-based control for metering and dispatch.
• MIL-STD Integration: Applying Military Standards (MIL-STD-810, MIL-STD-461) to civilian infrastructure.
TECHNICAL REPORT: S.E.E.E.I.S.U.A
AUTHOR: Tshingexbe Tshitadz Fiston
VERIFIED
PROJECT METRICS
Conflict Load: 70,000 MW
Budget Forecast: R50 Billion
Scope: Harmonizing City Power & Industrial Metering
SYSTEM STRATEGY V1.2 // S.E.E.E.I.S.U.A FRAMEWORK DOSSIER

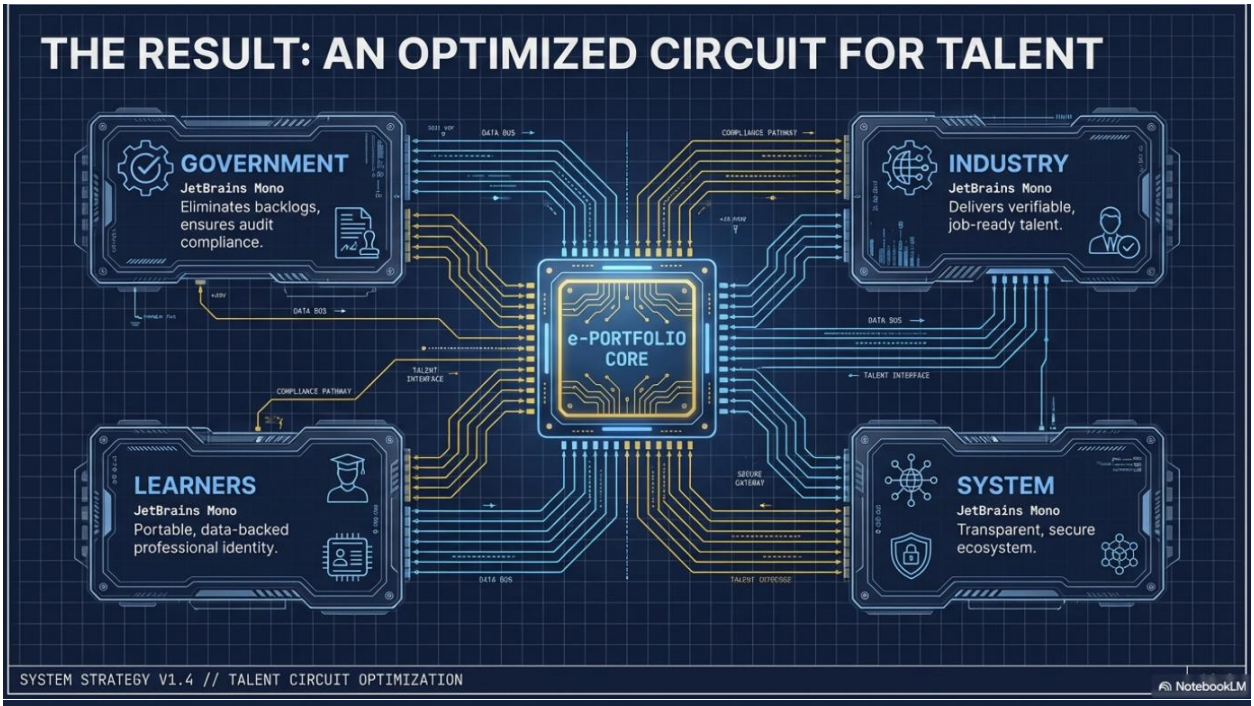

Pillar 3: Modernizing Pedagogy & EdTech
Strategizing the 'Teacher' function through integrated systems and practical frameworks.
LMS INTEGRATION
Alison
Microsoft Learn
Verified
Data-driven skills tracking and verified learning paths.
e-PORTFOLIO MANAGEMENT SYSTEM (EPMS)
Eliminating "portfolio damage" and ensuring audit readiness.
INSTRUCTIONAL DESIGN
FROM: Abstract Trade Theory
TO: Work-Integrated Learning (Construct and verify logic gates)
FRAMEWORKS: ADDIE & Technology Acceptance Model (TAM)
SYSTEM STRATEGY V1.3 // PEDAGOGY & EDTECH DOSSIER
16:9
NotebookLM

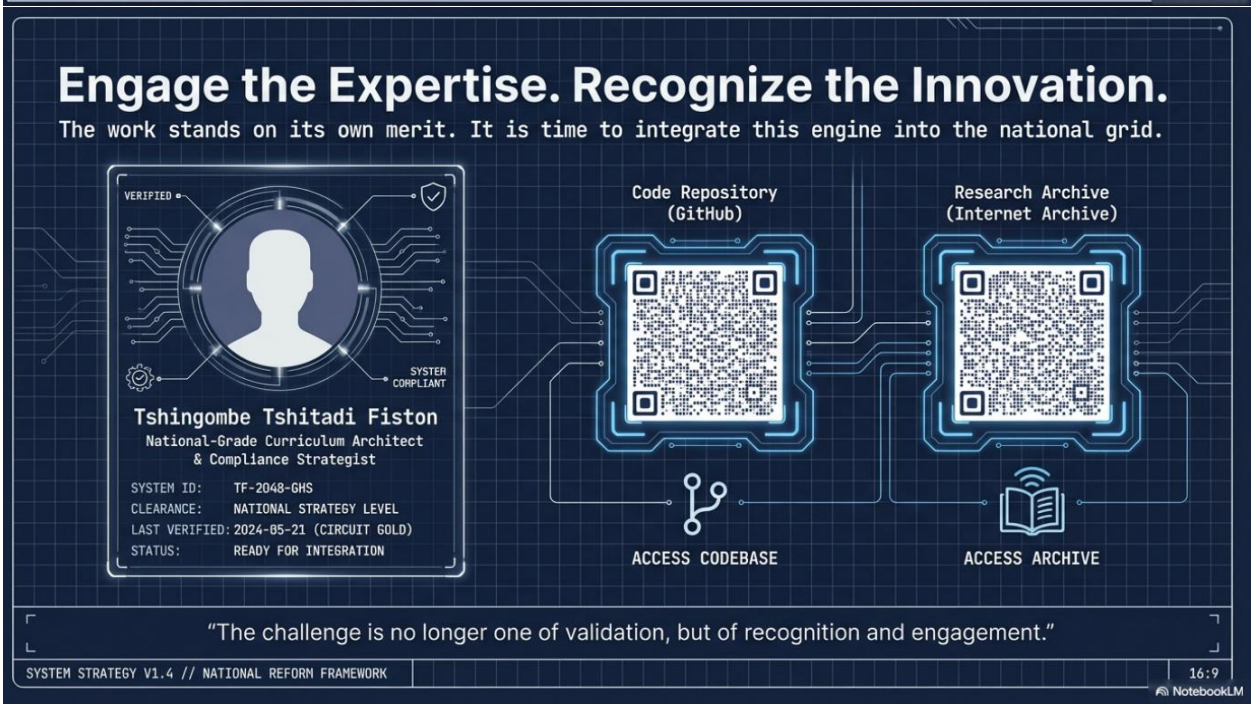

Technical Blueprint High-Fidelity
THE CALCULATION FLOW: AN AUTOMATED WORKFLOW
LOAD PROJECT PARAMETERS
(Human Resources, Materials, Infrastructure)
COMPUTE INTEGRALS
(Total Time, Resource Consumption, Risks)
$T = \int_0^N t_i \, di$
COMPUTE DERIVATIVES
(Rates of Change, Task Completion Rate)
$\frac{dN}{dt}$
IS OUTPUT AUDIT-READY?
NO
YES
VERIFIED
GENERATE CERTIFICATE + SUBMIT TO GITHUB/SAQA/NQF
SYSTEM STRATEGY V1.4 // CALCULATION FLOW & AUDIT DOSSIER
16:9


Technical Blueprint High-Fidelity
AUDIT-GRADE CREDENTIALING & GLOBAL MAPPING
GLOBAL ALIGNMENT
COUNTRY
STANDARD
VERIFICATION STATUS
FRANCE
Brevet de Technicien Supérieur (BTS) Électrotechnique (RNCP41007BC01)
VERIFIED
SOUTH AFRICA
NQF Level 3 - Unit Standard 259037 (Electrical Wire Ways)
PENDING REVIEW
SOUTH AFRICA
NQF Level 5 - National Certificate
PENDING REVIEW
SECURE ISSUANCE
CERTIFICATE
VERIFIED
BlockMark Technologies Integration:
Immutable records, NFT digital twins,
and expiration tracking.


CONTINUOUS LEARNING: THE ENGINE IN PRACTICE
VERIFIED SKILL BADGES: MICROSOFT LEARN
Microsoft Learn
Azure Data Engineering
Data & AI
Microsoft Fabric
Learner Dashboard: Key Performance Indicators
COURSES COMPLETED:
267
GLOBAL TEST-TAKER RANK:
TOP 6%
COURSE COMPLETION RATE:
92%
VERIFIED SKILL BADGES: ALISON
Alison
Diploma in Electrical Studies
ISO 37301 Compliance Management
RESEARCH: VERIFIED PUBLICATIONS
Published in Internet Archive & Elektor Magazine
SYSTEM STRATEGY V1.4 // LEARNER DASHBOARD & SKILL VERIFICATION
16:9
NotebookLM

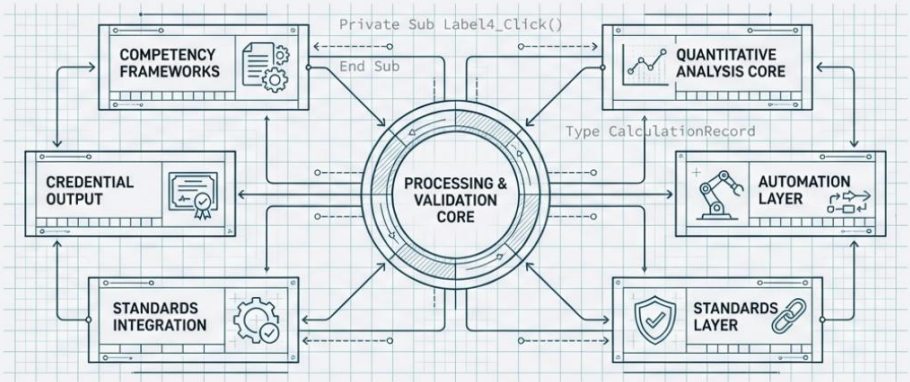

A Unified Framework for National Reform
1. Outcome-Driven Curriculum
Industry co-created (Eskom, Schneider Electric)
2. Technology-Enabled Administration
Centralized EPMS to eliminate backlogs
3. Industry-Integrated Assessment
Mandatory Work-Integrated Learning (WIL) for lecturers
SYSTEM STRATEGY V1.4 // NATIONAL REFORM FRAMEWORK
NotebookLM


THE RESULT: AN OPTIMIZED CIRCUIT FOR TALENT
GOVERNMENT
JetBrains Mono
Eliminates backlogs, ensures audit compliance.
INDUSTRY
JetBrains Mono
Delivers verifiable, job-ready talent.
e-PORTFOLIO CORE
LEARNERS
JetBrains Mono
Portable, data-backed professional identity.
SYSTEM
JetBrains Mono
Transparent, secure ecosystem.
DATA BUS
COMPLIANCE PATHWAY
TALENT INTERFACE
SECURE GATEWAY
SYSTEM STRATEGY V1.4 // TALENT CIRCUIT OPTIMIZATION
NotebookLM


Engage the Expertise. Recognize the Innovation.
The work stands on its own merit. It is time to integrate this engine into the national grid.
VERIFIED
SYSTEM COMPLIANT
Tshingombe Tshitadi Fiston
National-Grade Curriculum Architect & Compliance Strategist
SYSTEM ID: TF-2048-GHS
CLEARANCE: NATIONAL STRATEGY LEVEL
LAST VERIFIED: 2024-05-21 (CIRCUIT GOLD)
STATUS: READY FOR INTEGRATION
Code Repository (GitHub)
Research Archive (Internet Archive)
ACCESS CODEBASE
ACCESS ARCHIVE
"The challenge is no longer one of validation, but of recognition and engagement."
SYSTEM STRATEGY V1.4 // NATIONAL REFORM FRAMEWORK
16:9
NotebookLM

THE AUDIT-GRADE CAREER ENGINE & ENERGY SYSTEMS FRAMEWORK

A Technical Blueprint for Verifiable Competence, Industrial Metering, and Educational Reform.



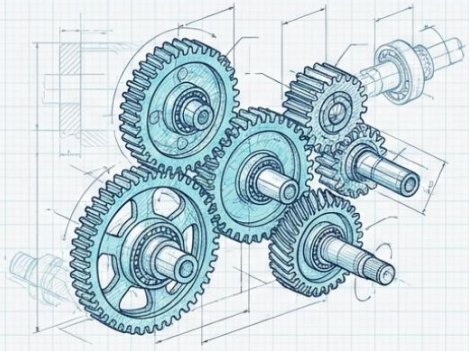
v2.1

Author: Tshingombe Tshitadi Fiston – National-grade curriculum architect & compliance strategist.

NotebookLM

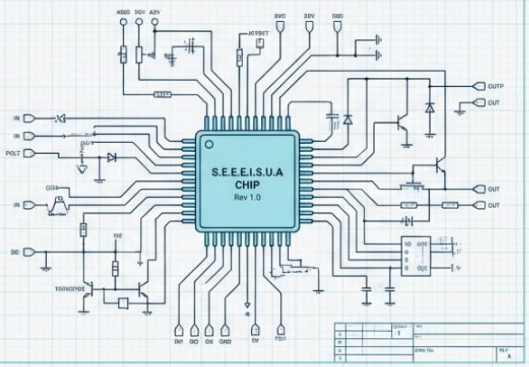
REWIRING THE INFRASTRUCTURE OF TALENT AND POWER

CORE PROPOSAL 1: THE CAREER ENGINE



An algorithmic credentialing system. Synthesizes academic theory, vocational skills, and self-taught expertise into a single, audit-ready data structure.

CORE PROPOSAL 2: S.E.E.E.I.S.U.A

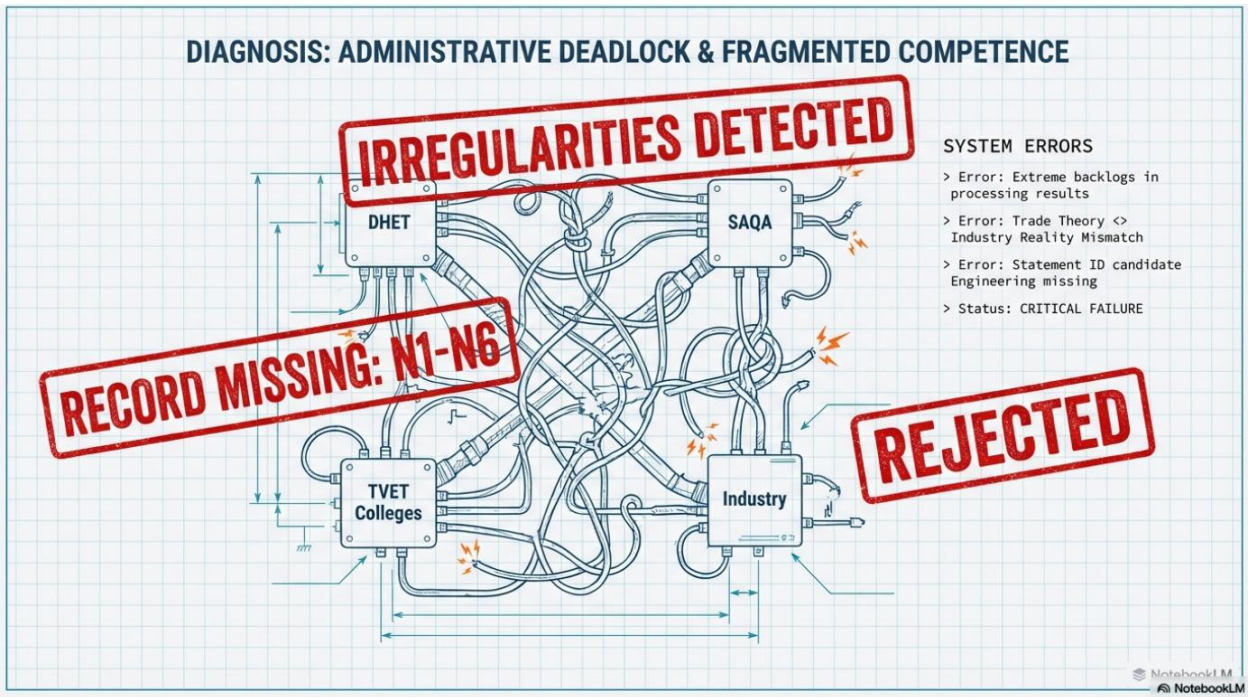


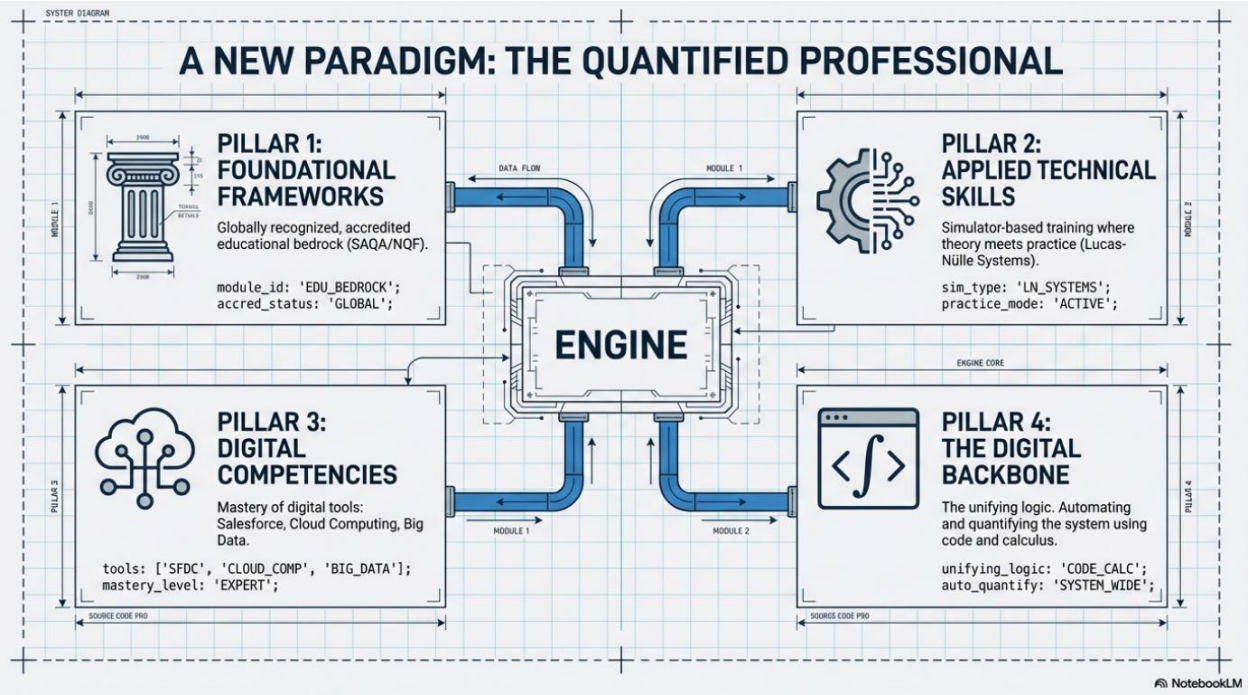
Support for Energy-Efficient Electrical & Industrial Systems. A peace-driven regulatory framework for energy efficiency, industrial metering, and MIL-STD compliance.

Source Code Pro

SYSTEM LOGIC: Automating trust and efficiency across two national critical sectors.

NotebookLM


DIAGNOSIS: ADMINISTRATIVE DEADLOCK & FRAGMENTED COMPETENCE
IRREGULARITIES DETECTED
RECORD MISSING: N1-N6
REJECTED
DHET
SAQA
TVET Colleges
Industry
SYSTEM ERRORS
> Error: Extreme backlogs in processing results
> Error: Trade Theory <> Industry Reality Mismatch
> Error: Statement ID candidate Engineering missing
> Status: CRITICAL FAILURE
NotebookLM


A NEW PARADIGM: THE QUANTIFIED PROFESSIONAL
PILLAR 1: FOUNDATIONAL FRAMEWORKS
Globally recognized, accredited educational bedrock (SAQA/NQF).
module_id: 'EDU_BEDROCK';
accred_status: 'GLOBAL';
PILLAR 2: APPLIED TECHNICAL SKILLS
Simulator-based training where theory meets practice (Lucas-Nülle Systems).
sim_type: 'LN_SYSTEMS';
practice_mode: 'ACTIVE';
ENGINE
PILLAR 3: DIGITAL COMPETENCIES
Mastery of digital tools: Salesforce, Cloud Computing, Big Data.
tools: ['SFDC', 'CLOUD_COMP', 'BIG_DATA'];
mastery_level: 'EXPERT';
PILLAR 4: THE DIGITAL BACKBONE
The unifying logic. Automating and quantifying the system using code and calculus.
unifying_logic: 'CODE_CALC';
auto_quantify: 'SYSTEM_WIDE';
NotebookLM

THE DIGITAL BACKBONE: AUTOMATING TRUST WITH VBA & CALCULUS

THE CODE STRUCTURE

```
' Module: CredentialDashboard
Type CalculationRecord
    DateStamp As Date
    Topic As String
    MethodUsed As String
    SimulationTool As String
    ResultSummary As String
    Award As String
    RewardPoints As Integer
End Type
```

THE QUANTITATIVE METRICS

Total Engagement Over Time:

$$E_{total} = \int_0^T E(t)\,dt$$

Total Energy Harvested (Wind):

$$E = \int_0^T \frac{1}{2}\rho A v^3 \eta\,dt$$

We do not just claim skills; we calculate them.
This creates Audit-Ready data structures.

Not NotebookLM

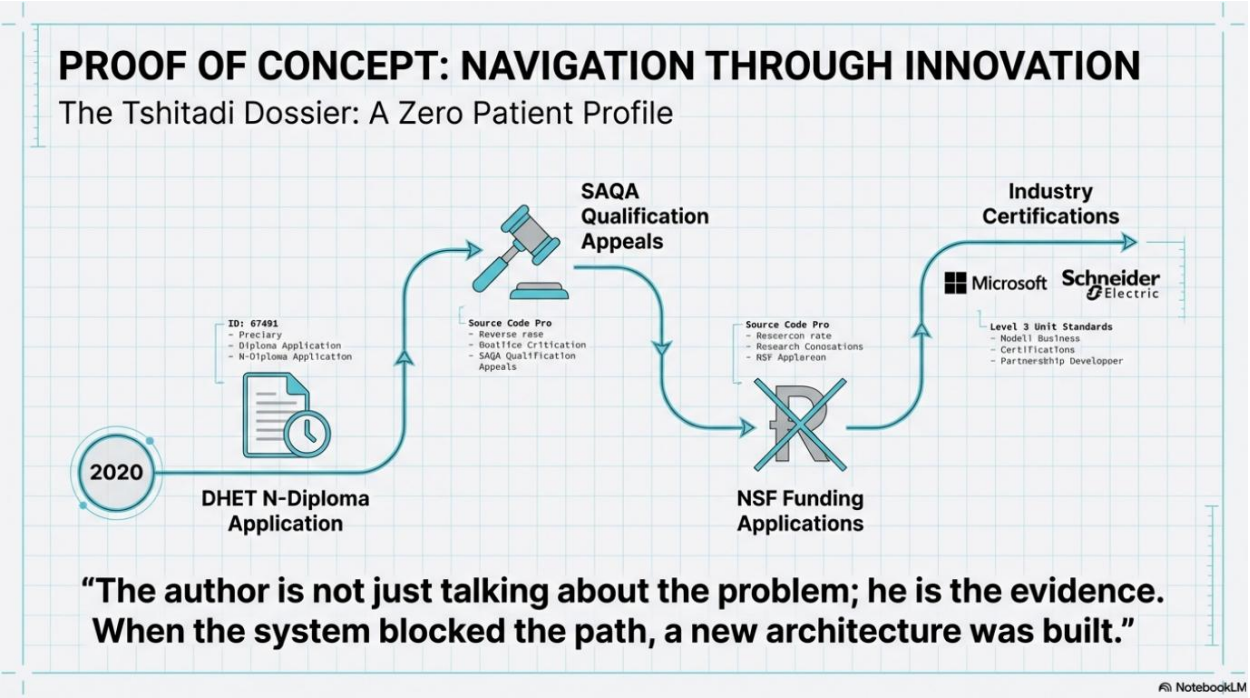
BUILT ON A BEDROCK OF GLOBAL STANDARDS

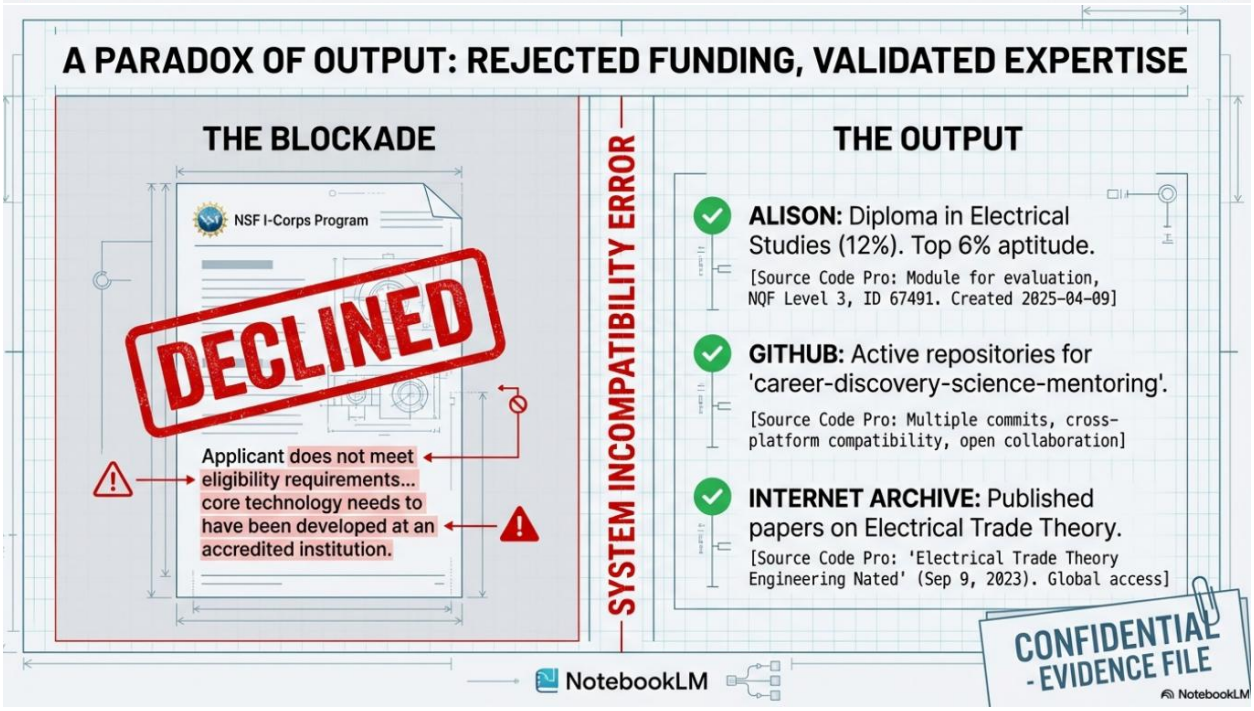
Standards Integration

SOUTH AFRICA	FRANCE	INDIA
SAQA		
National Certificate: N3 Engineering Studies (ID 67491).	Brevet de Technicien Supérieur (BTS) Électrotechnique.	NSQF Level 5 - Electrician Trade Theory.
Source Code Pro, details NQF Level 3 Unit Standards (e.g., Design and install electrical wire ways).	Technical details as in Competency Blocks (RNCP41007BC01) - Study and design of installations.	Source Code Pro, details: 525-hour practical curriculum including safety and AC/DC circuits.

The Career Engine acts as a Universal Translator for technical competence, mapping local credits to global benchmarks.

NotebookLM


PROOF OF CONCEPT: NAVIGATION THROUGH INNOVATION
The Tshitadi Dossier: A Zero Patient Profile
2020
DHET N-Diploma Application
SAQA Qualification Appeals
NSF Funding Applications
Industry Certifications
Microsoft
Schneider Electric
"The author is not just talking about the problem; he is the evidence. When the system blocked the path, a new architecture was built."
NotebookLM


A PARADOX OF OUTPUT: REJECTED FUNDING, VALIDATED EXPERTISE
THE BLOCKADE
NSF I-Corps Program
DECLINED
Applicant does not meet eligibility requirements... core technology needs to have been developed at an accredited institution.
SYSTEM INCOMPATIBILITY ERROR
THE OUTPUT
ALISON: Diploma in Electrical Studies (12%). Top 6% aptitude.
[Source Code Pro: Module for evaluation, NQF Level 3, ID 67491. Created 2025-04-09]
GITHUB: Active repositories for 'career-discovery-science-mentoring'.
[Source Code Pro: Multiple commits, cross-platform compatibility, open collaboration]
INTERNET ARCHIVE: Published papers on Electrical Trade Theory.
[Source Code Pro: 'Electrical Trade Theory Engineering Nated' (Sep 9, 2023). Global access]
CONFIDENTIAL - EVIDENCE FILE
NotebookLM

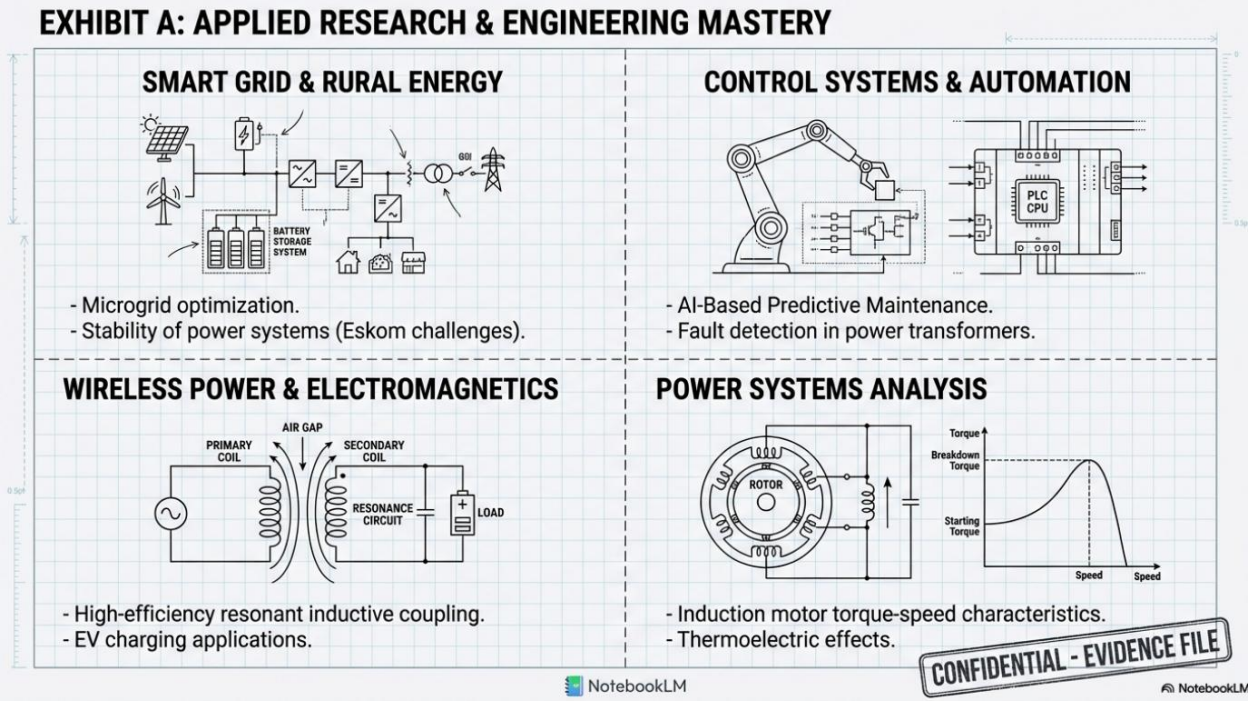
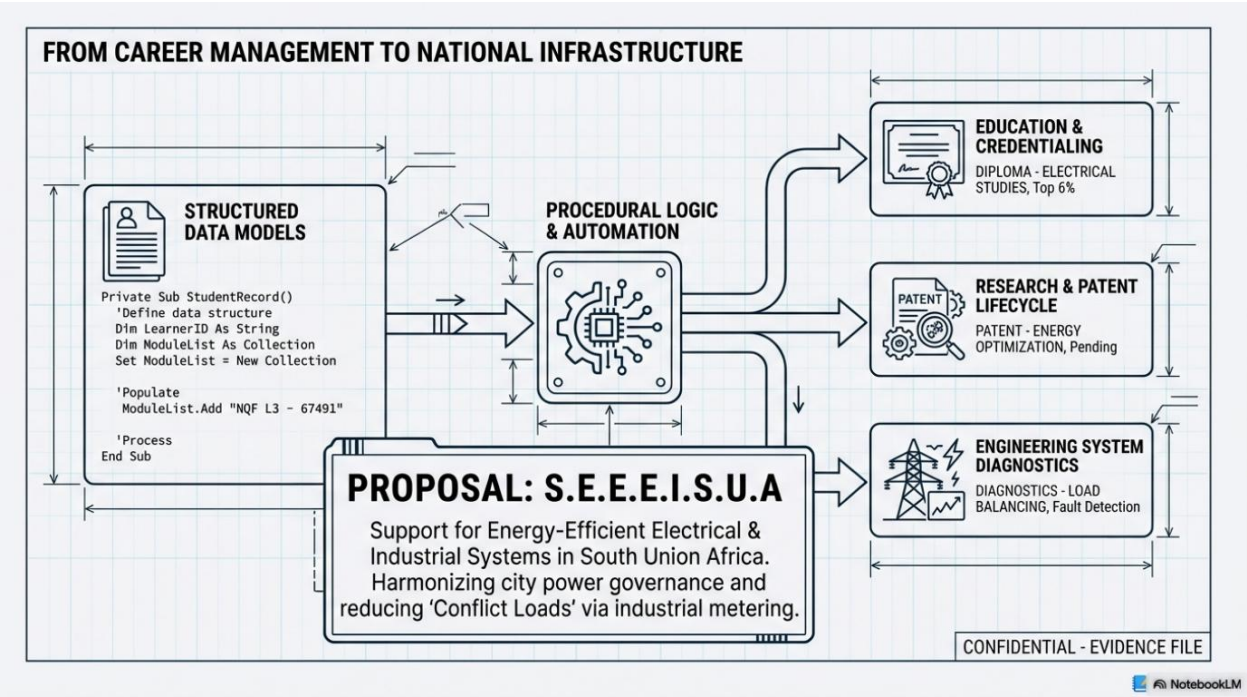
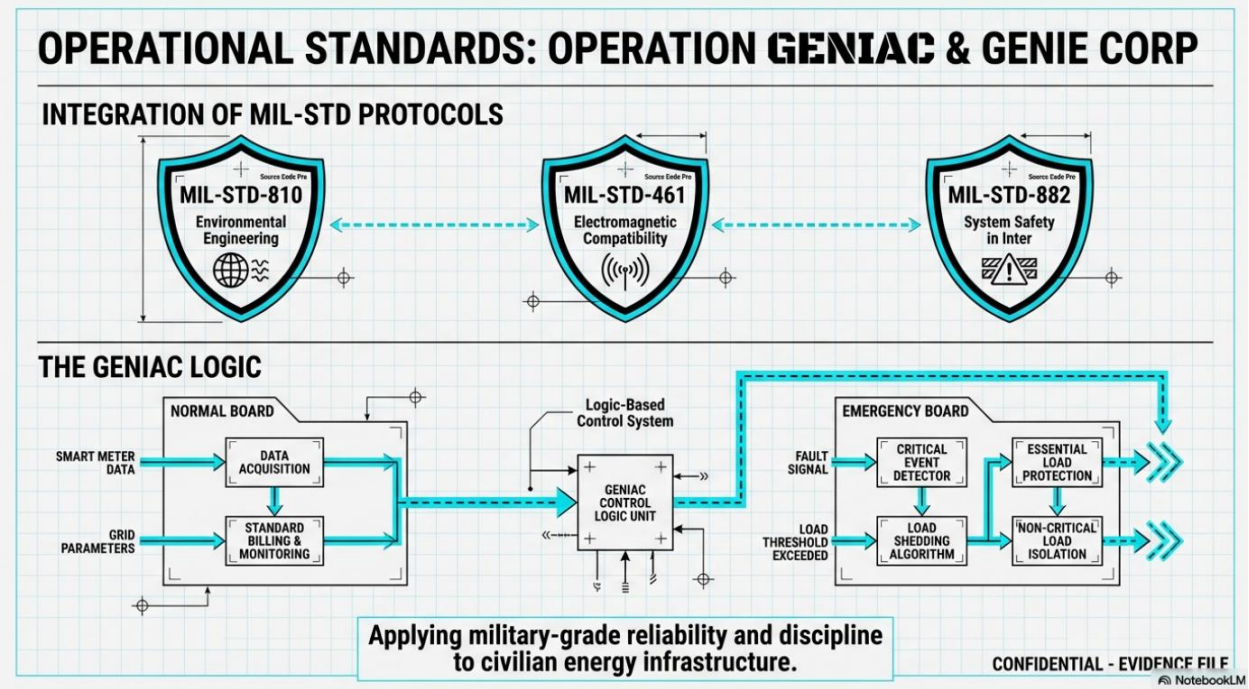


EXHIBIT A: APPLIED RESEARCH & ENGINEERING MASTERY
SMART GRID & RURAL ENERGY
BATTERY STORAGE SYSTEM
GRI
- Microgrid optimization.
- Stability of power systems (Eskom challenges).
CONTROL SYSTEMS & AUTOMATION
PLC CPU
- AI-Based Predictive Maintenance.
- Fault detection in power transformers.
WIRELESS POWER & ELECTROMAGNETICS
AIR GAP
PRIMARY COIL
SECONDARY COIL
RESONANCE CIRCUIT
LOAD
- High-efficiency resonant inductive coupling.
- EV charging applications.
POWER SYSTEMS ANALYSIS
ROTOR
Torque
Breakdown Torque
Starting Torque
Speed
Speed
- Induction motor torque-speed characteristics.
- Thermoelectric effects.
CONFIDENTIAL - EVIDENCE FILE
NotebookLM
NotebookLM


FROM CAREER MANAGEMENT TO NATIONAL INFRASTRUCTURE
STRUCTURED DATA MODELS
Private Sub StudentRecord()
'Define data structure
Dim LearnerID As String
Dim ModuleList As Collection
Set ModuleList = New Collection
'Populate
ModuleList.Add "NQF L3 - 67491"
'Process
End Sub
PROCEDURAL LOGIC & AUTOMATION
EDUCATION & CREDENTIALING
DIPLOMA - ELECTRICAL STUDIES, Top 6%
PATENT
RESEARCH & PATENT LIFECYCLE
PATENT - ENERGY OPTIMIZATION, Pending
ENGINEERING SYSTEM DIAGNOSTICS
DIAGNOSTICS - LOAD BALANCING, Fault Detection
PROPOSAL: S.E.E.E.I.S.U.A
Support for Energy-Efficient Electrical & Industrial Systems in South Union Africa. Harmonizing city power governance and reducing 'Conflict Loads' via industrial metering.
CONFIDENTIAL - EVIDENCE FILE
NotebookLM


OPERATIONAL STANDARDS: OPERATION GENIAC & GENIE CORP
INTEGRATION OF MIL-STD PROTOCOLS
MIL-STD-810
Environmental Engineering
MIL-STD-461
Electromagnetic Compatibility
MIL-STD-882
System Safety in Inter
THE GENIAC LOGIC
NORMAL BOARD
SMART METER DATA
DATA ACQUISITION
GRID PARAMETERS
STANDARD BILLING & MONITORING
Logic-Based Control System
GENIAC CONTROL LOGIC UNIT
EMERGENCY BOARD
FAULT SIGNAL
CRITICAL EVENT DETECTOR
ESSENTIAL LOAD PROTECTION
LOAD THRESHOLD EXCEEDED
LOAD SHEDDING ALGORITHM
NON-CRITICAL LOAD ISOLATION
Applying military-grade reliability and discipline to civilian energy infrastructure.
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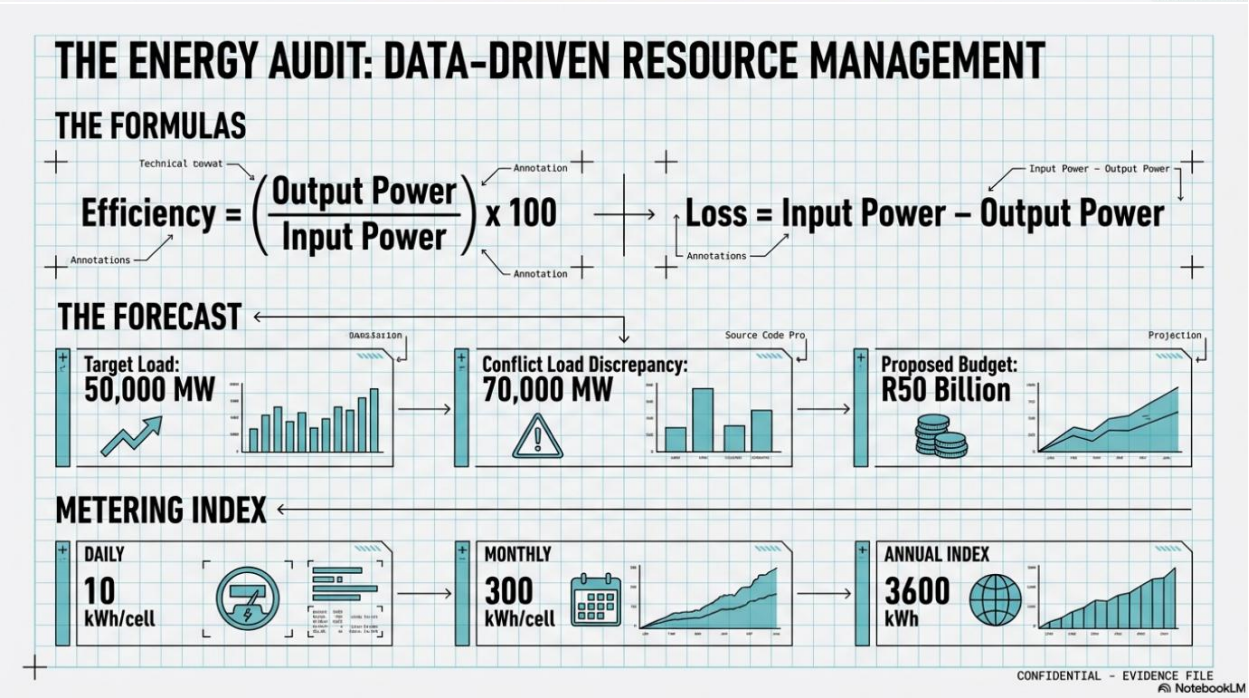
THE ENERGY AUDIT: DATA-DRIVEN RESOURCE MANAGEMENT
THE FORMULAS
Technical towat
Efficiency = (Output Power / Input Power) x 100
Annotation
Annotations
Annotation
Loss = Input Power – Output Power
Input Power – Output Power
Annotations
THE FORECAST
Target Load:
50,000 MW
Conflict Load Discrepancy:
70,000 MW
Source Code Pro
Proposed Budget:
R50 Billion
Projection
METERING INDEX
DAILY
10
kWh/cell
MONTHLY
300
kWh/cell
ANNUAL INDEX
3600
kWh
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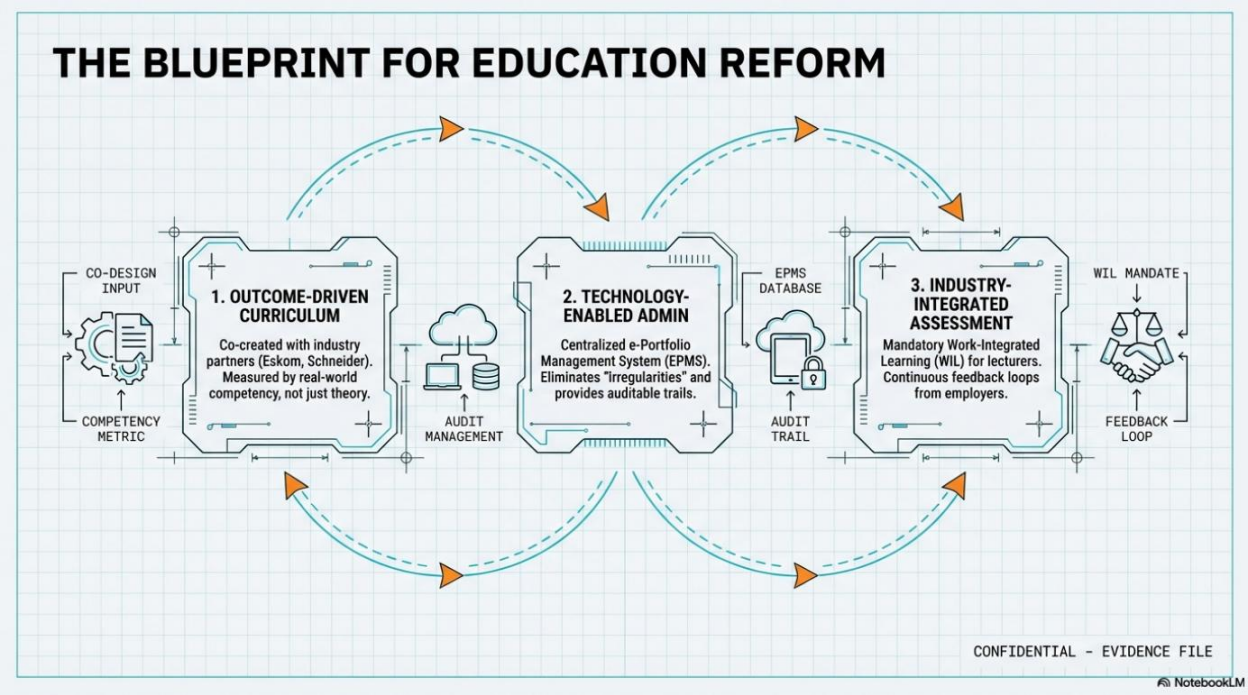
THE BLUEPRINT FOR EDUCATION REFORM
CO-DESIGN INPUT
COMPETENCY METRIC
1. OUTCOME-DRIVEN CURRICULUM
Co-created with industry partners (Eskom, Schneider). Measured by real-world competency, not just theory.
AUDIT MANAGEMENT
2. TECHNOLOGY-ENABLED ADMIN
Centralized e-Portfolio Management System (EPMS). Eliminates "irregularities" and provides auditable trails.
EPMS DATABASE
AUDIT TRAIL
3. INDUSTRY-INTEGRATED ASSESSMENT
Mandatory Work-Integrated Learning (WIL) for lecturers. Continuous feedback loops from employers.
WIL MANDATE
FEEDBACK LOOP
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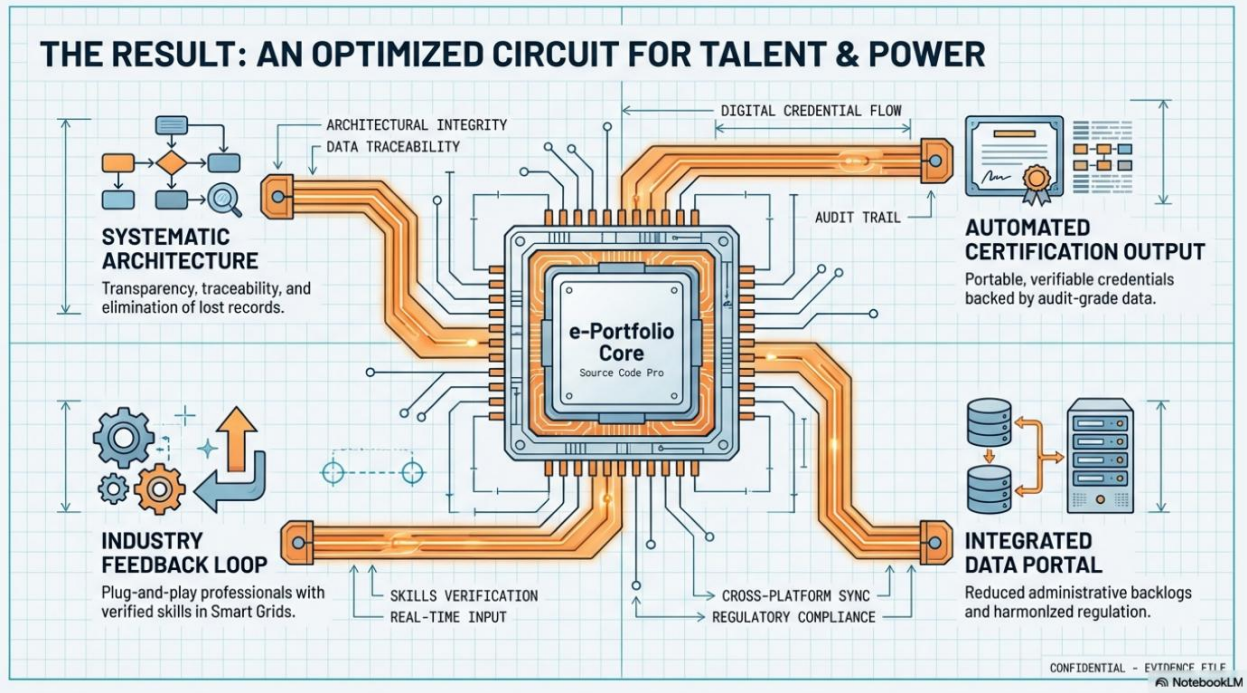
THE RESULT: AN OPTIMIZED CIRCUIT FOR TALENT & POWER
ARCHITECTURAL INTEGRITY
DATA TRACEABILITY
SYSTEMATIC ARCHITECTURE
Transparency, traceability, and elimination of lost records.
DIGITAL CREDENTIAL FLOW
AUDIT TRAIL
AUTOMATED CERTIFICATION OUTPUT
Portable, verifiable credentials backed by audit-grade data.
e-Portfolio Core
Source Code Pro
INDUSTRY FEEDBACK LOOP
Plug-and-play professionals with verified skills in Smart Grids.
SKILLS VERIFICATION
REAL-TIME INPUT
CROSS-PLATFORM SYNC
REGULATORY COMPLIANCE
INTEGRATED DATA PORTAL
Reduced administrative backlogs and harmonized regulation.
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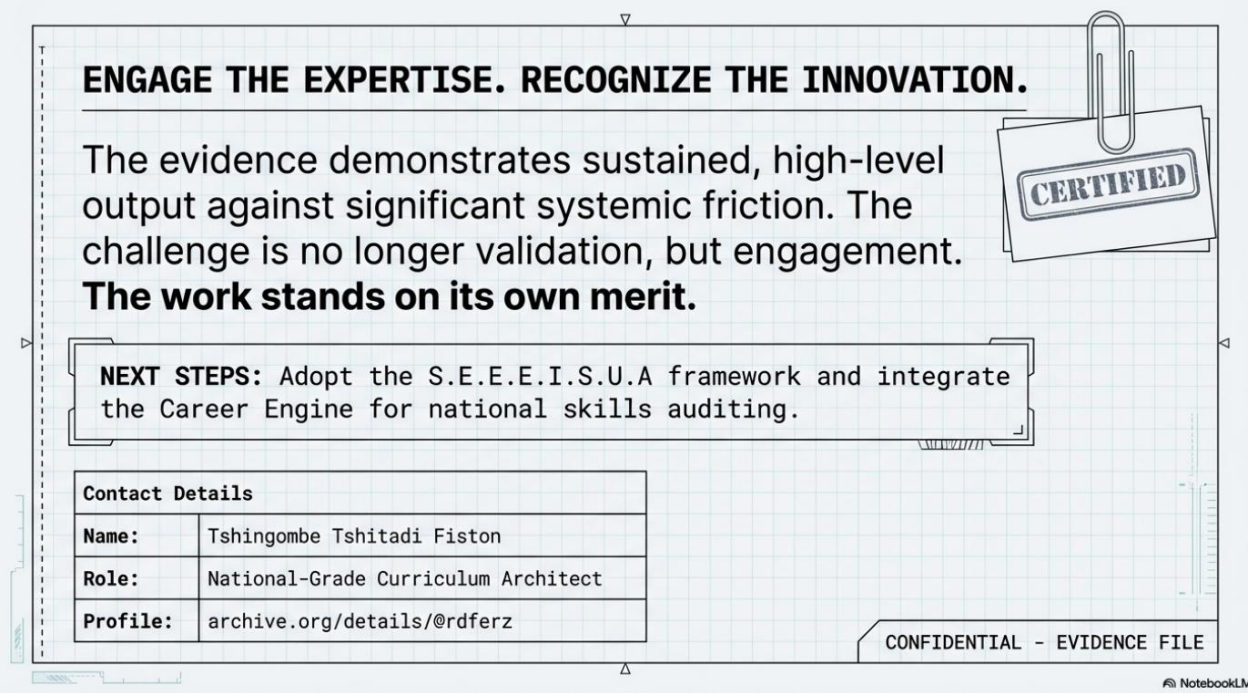
ENGAGE THE EXPERTISE. RECOGNIZE THE INNOVATION.
CERTIFIED
The evidence demonstrates sustained, high-level output against significant systemic friction. The challenge is no longer validation, but engagement.
The work stands on its own merit.
NEXT STEPS: Adopt the S.E.E.E.I.S.U.A framework and integrate the Career Engine for national skills auditing.
Contact Details
Name: Tshingombe Tshitadi Fiston
Role: National-Grade Curriculum Architect
Profile: archive.org/details/@rdferz
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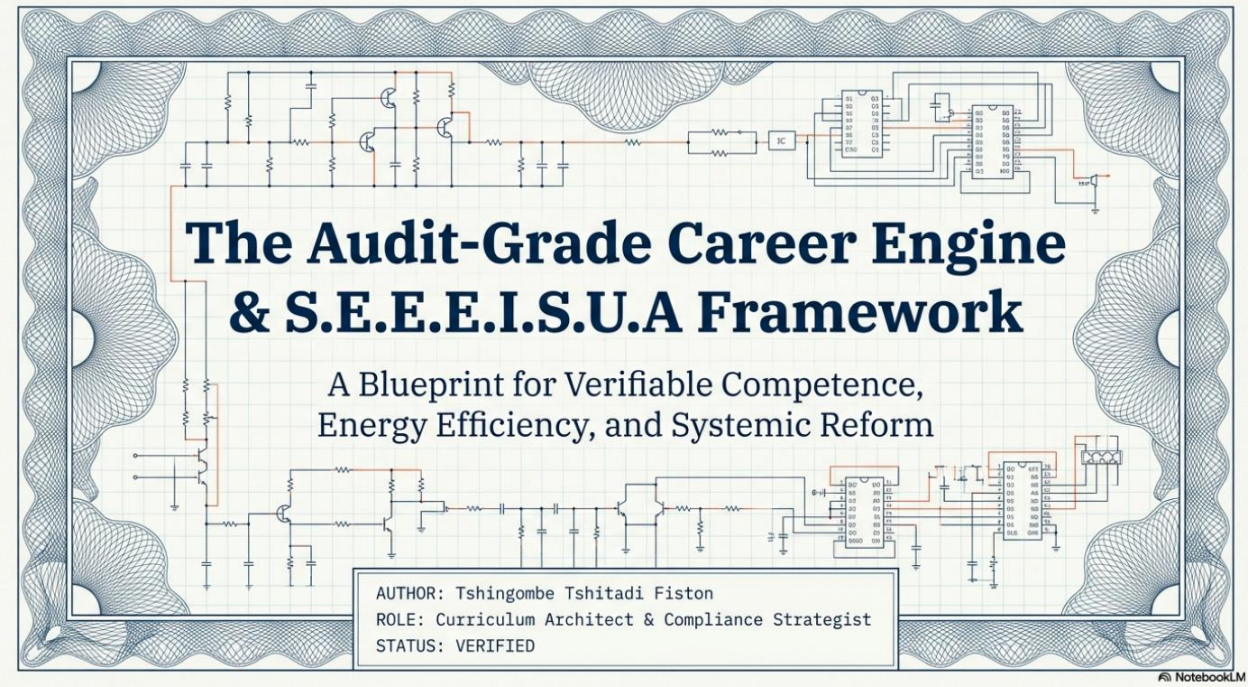

The Audit-Grade Career Engine & S.E.E.E.I.S.U.A Framework
A Blueprint for Verifiable Competence, Energy Efficiency, and Systemic Reform
AUTHOR: Tshingombe Tshitadi Fiston
ROLE: Curriculum Architect & Compliance Strategist
STATUS: VERIFIED
NotebookLM

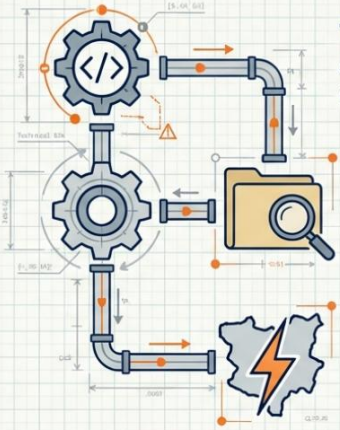
Executive Summary: A Systemic Diagnostic

The Core Challenge

We identify a dual failure in the industrial landscape:

1. Administrative Deadlock in TVET credentialing.
2. Operational Fragmentation in energy regulation.

The Solution Architecture



The Engine
Automated, code-driven credentialing.

The Dossier
Longitudinal case study of resilience.

The Application
S.E.E.E.I.S.U.A Energy Framework.

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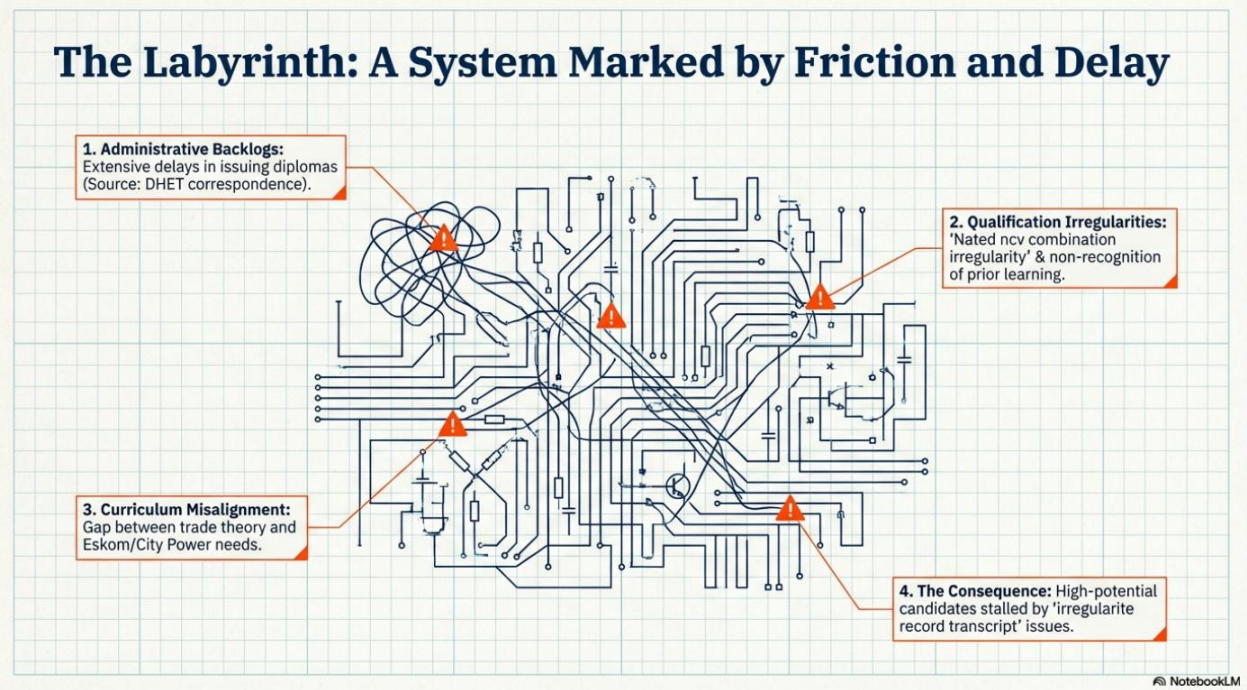
The Labyrinth: A System Marked by Friction and Delay
1. Administrative Backlogs: Extensive delays in issuing diplomas (Source: DHET correspondence).
2. Qualification Irregularities: 'Nated ncv combination irregularity' & non-recognition of prior learning.
3. Curriculum Misalignment: Gap between trade theory and Eskom/City Power needs.
4. The Consequence: High-potential candidates stalled by 'irregularite record transcript' issues.
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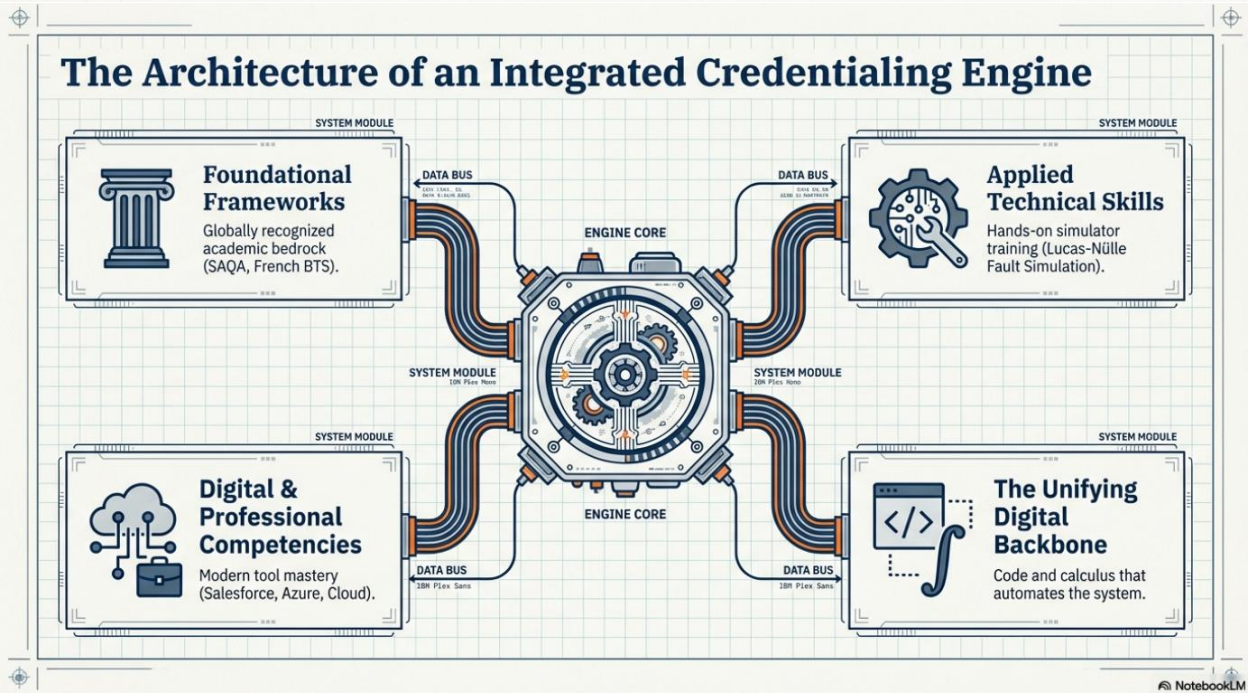
The Architecture of an Integrated Credentialing Engine
SYSTEM MODULE
Foundational Frameworks
Globally recognized academic bedrock (SAQA, French BTS).
DATA BUS
ENGINE CORE
SYSTEM MODULE
Applied Technical Skills
Hands-on simulator training (Lucas-Nülle Fault Simulation).
SYSTEM MODULE
Digital & Professional Competencies
Modern tool mastery (Salesforce, Azure, Cloud).
SYSTEM MODULE
The Unifying Digital Backbone
Code and calculus that automates the system.
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